

THE CANDY MANUFACTURER

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APRIL, 1923

No. 4



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Superintendents Roundtable



Read wherever good candy is made



DELFT

The World's Best Food Gelatine

HAROLD A. SINCLAIR, 160 Broadway, NEW YORK

"Price is a relative term — Quality always a concrete fact"

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EVERYWHERE

Four Good Points About Delft Gelatine

1. It is made in Delft, Holland, whose people have inherited through centuries the habit of extreme cleanliness.
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3. Because Delft Gelatine is pure and clean, free from harmful and liquefying bacteria, and of unusual strength and clarity, it improves the quality of your goods.
4. It costs you less because it goes farther than inferior gelatine.

Let us send you prices and samples. Then try it out and judge for yourself.

"The Story of Delft," fully illustrated, will be sent to you on request

Harold A. Sinclair



Members: National Confectioners' Association, Midland Club, Chicago Association of Commerce.

THE CANDY MANUFACTURER

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A Specialized Technical and Commercial Magazine for Confectionery Superintendents, Purchasing Agents and Executives

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Vol. III

APRIL, 1923

No. 4

POLICY

THE CANDY MANUFACTURER, being a specialized publication for manufacturing confectioners exclusively, is edited in the interest of the executive, the purchasing, production and sales departments, and provides a medium for the free and frank discussion of manufacturing policies, problems, methods and materials.

The same corresponding policy applies to the advertising pages which are available only to the supply manufacturers for the advertising of products which are used by the manufacturing confectioner—machinery, raw materials and factory supplies, etc.

The Candy Manufacturer believes in

A Technical Candy School with resident and extension courses for factory superintendents and journeymen candy makers.

Rigid Inspection of candy factories to enforce sanitation and working conditions necessary for the production of a pure food product.

Pure Food Legislation which enforces a quality standard for confectionery.

Uniform Method of cost finding and accounting.

An Annual Exposition of Confectioners' Supplies and equipment under direction of (not merely endorsed by) The National Confectioners' Association.

Entered as Second-Class Matter October 24, 1922, at the Postoffice at Chicago, Illinois, under the Act of March 3, 1879

Issue of April, 1923

(3)

The Candy Manufacturer



The Bacteriological Laboratory of the Crystal Gelatine Co. at Peabody, Massachusetts

A—Petri dishes for counting bacteria.

B—Microscope for examination and identification of bacteria.

C—Autoclave for sterilizing media under pressure.

D—Incubator.

E—Microscope Lamp.

F—Dilution Bottles.

ANNOUNCEMENT: We have recently installed a Bacteriological Department to our Research Laboratory which is located at our Peabody, Mass., factory.

We are prepared, on request, to send a Certificate of Analysis with each shipment of Marshmallow Gelatine.

This Certificate of Analysis will be issued by a disinterested authority (The Boston Bio-chemical Laboratory) to substantiate the findings of our own laboratory, that Crystal Marshmallow Gelatine is entirely free from all harmful bacteria.

*May we submit samples with suggestions
on your Marshmallow problems.*

CRYSTAL GELATINE CO.

121 Beverly St., Boston, Mass.

Branch Stores

New York
14 Ferry Street

St. Louis
408 Elm Street

Philadelphia
418 Arch Street

San Francisco
Fairfax Avenue and Rankin Street

Chicago
3630 Iron Street



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The Candy Manufacturer's Approved Advertising of Confectioners' Machinery and Supplies and Miscellaneous Advertising Directed to Manufacturing Confectioners

POLICY: THE CANDY MANUFACTURER is essentially a manufacturers' publication and therefore is a logical advertising medium only for confectioners' supplies and equipment. The advertising pages of THE CANDY MANUFACTURER are open only for messages regarding reputable products or propositions of which the manufacturers of confectionery and chocolate are logical buyers.

This policy EXCLUDES advertising directed to the distributors of confectionery, the soda fountain and ice cream trade. The advertisements in THE CANDY MANUFACTURER are presented herewith with our recommendation. The machinery equipment and supplies advertised in this magazine, to the best of our knowledge, possess merit worthy of your careful consideration.

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Essential Oils, Fruit Flavor Bases, Cumarin and Vanillin

Seasonable Offerings:

Oil Peppermint, Guaranteed Absolutely Pure and of Finest Flavor

**Oil Lemon and Sweet Orange, F. B., Handpressed
of Unexcelled Quality**

Hard Candy Flavors

APPLE
BANANA
BLACKBERRY
CHERRY (with Pit Flavor)
CHERRY (without Pit Flavor)
CHERRY, Wild
CURRANT, Black

CURRANT, Red
GOOSEBERRY
GRAPE
HONEY
LOGANBERRY
PEACH
PEAR

PINEAPPLE
RASPBERRY
ROSE
STRAWBERRY
STRAWBERRY, Preserved
VIOLET

THE reception accorded to this new group, which we placed on the market only a short time ago, has been gratifying and supports all we claim for them. These flavors are of the highest concentration, have the delicious aroma of the fruit itself and have been manufactured with a special view to permanence and TO WITHSTAND CONSIDERABLE HEAT. In addition to the large

amount of natural extractive matter from the fruits present, the Flavors contain sufficient Ethers, Esters, Vegetable Tinctures, etc., to provide the necessary strength and impart the special characteristics necessary and claimed for this group.

For all other kinds of confectionery, particularly cream work, the following groups have been successfully employed:

TRUE FRUIT AROMA ESSENCES

Extra Concentrated

which represent nothing but the extractive matter of SOUND, RIPE FRUIT; and our

FRITZBRO-AROMES

which are the IDEAL FLAVORS OF HIGHEST CONCENTRATION, based on Fruit Extractions and fortified with other harmless ingredients to accentuate the SPECIAL CHARACTERISTICS of the respective fruit.

With these lines, you can solve ANY PROBLEM of flavoring candies, of whatever kind they may be. Samples and further details will be cheerfully furnished upon application.

Fritzsche Brothers, Inc., New York

Chicago Branch: 33-35 West Kinzie Street

Ucopco

Pure Food

Gelatine

"Not Hard to Take"

Are you prepared to get your share of the increased volume of business available this year with products of exceptional quality?

One sure way to better your marshmallow pieces is to adopt UCOPCO Pure Food Gelatine.

UCOPCO is a certain volume producer—a flavor and moisture retainer—and will give you the meaty, tender marshmallow that will assure popularity and demand for your brand.

Don't overlook this sure bet.

Any of the offices listed below can supply you with samples and further money-making information.

United Chemical & Organic Products Co.
 Home Offices: 4200 S. Marshfield Avenue, Chicago

Branches:
 New York City New Orleans San Francisco
 Milwaukee Detroit

Ucopco Pure Food Gelatine

Flavor Value

Value is not composed of a single element; mathematically speaking, it is a function of both price and quality; it can only be computed on the basis of price paid and quality received.

The wise buyer of flavoring ingredients confines his purchases rigidly to sources of supply which guarantee him the maximum return in value, the most economical co-ordination of price and quality.

Flavoring materials recommended by the House of Ungerer meet this requirement to the complete satisfaction of the most exacting purchaser.

We urge exhaustive test of our

OZONE-VANILLIN

OIL PEPPERMINT

OIL WINTERGREEN

OIL ORANGE ITALIAN

OIL ORANGE WEST INDIAN

OIL LEMON SUPERFINE

SIMILE FRUIT ESSENCES

NATURAL FRUIT FLAVORS

CONFECTIONERS' FLORAL FLAVORS

"Our Quality Is Always Higher Than Our Price"

UNGERER & CO., New York

124 West Nineteenth Street

CHICAGO
189 No. Clark Street

PARIS, FRANCE
11 Rue Vezelay



17 different tests—then graded

That's why Swift's Gelatin is always uniform

You know how important it is to have gelatin of uniform quality in your product.

You may even employ a corps of chemists just to make sure on that point.

It is, of course, the gelatin maker's job to see that you get the quality you want.

But gelatin makers have a problem here, for there is no way of telling by the raw material or the method used *exactly* what grade the finished product will be. There are always variations.

Swift & Company has an unlimited supply of raw materials for the making of high-grade gelatin. Only the best of it is used.

Swift & Company has the most modern equipment for the making of gelatin. It provides every possible guarantee of uniformity.

But the usual method of grading by "runs" is not sufficient for us.

The only way to tell accurately Swift's Gelatin is graded after 17 tests! That's why you can depend on its being remarkably uniform, the highest quality for the price you pay.

A Swift product, it merits the confidence that is always granted to products that bear this name.

It is distributed today from 16 cities. Quick deliveries are possible to any part of the United States.

And the prices will interest you.

Whether you are in the market for gelatin now or studying ways to protect the quality of your product, you are invited to use this coupon. It will not obligate you in any way.

Fill it out and mail it *now*.

Swift & Company, U. S. A.

Swift's Quality Gelatin

Swift &
Company
Dept. 8-B, Chicago
Please send samples
and quotations on your
grades of gelatin.
Please send representative.

Name.....

Address.....

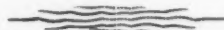
City.....

An Ideal Flavor for Cream Centers

That is the testimony of some of the most exacting
candy manufacturers in America regarding our

CONFECTIONERS ORANGE PASTE

Made from ripe California Oranges



WE would like to acquaint more candy
manufacturers with our entire line of
**Fruit Flavors, Food Colors and Essential
Oils.**

The following are among our list of flavors that have
proven their merit with candy manufacturers who de-
mand quality and value received. May we send you
a working sample?

Butter
Cherry
Wild Cherry
Honey
Maraschino

Maple
Peach
Pineapple
Raspberry
Roman Punch

*Every purchasing agent and Candy
Superintendent should have our price list
showing entire line; send for your copy.*

W. J. BUSH & COMPANY, Inc.

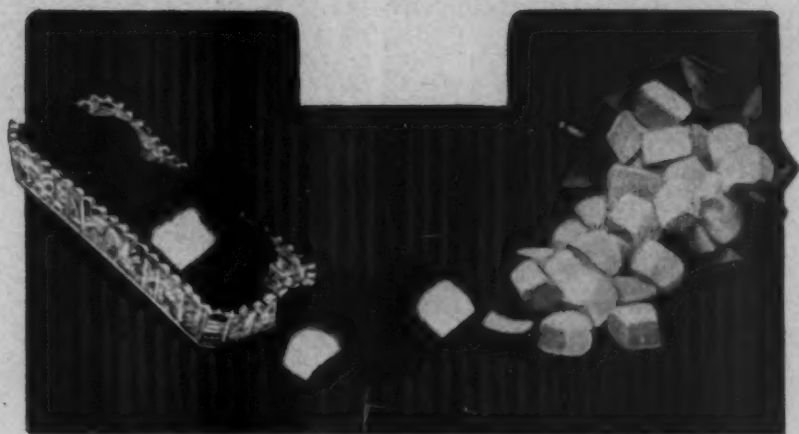
370 Seventh Avenue, NEW YORK CITY, N. Y.

1018 S. Wabash Avenue, CHICAGO

70 Kilby Street, BOSTON

Manufacturers of Fruit Flavors, Food Colors and Distillers of Essential Oils.

Nulomoline for Better Candy



MARSHMALLOW

NULOMOLINE keeps plain marshmallows fresh and soft, preventing both drying out and *graining off*. In coated goods it enables you to maintain a satisfactory standard of sweetness without danger from roughness caused by *grain*. NULOMOLINE will work well in conjunction with corn syrup and sugar, or just sugar alone.

*P.S. Nulomoline makes
Candies that keep.*

The Nulomoline Company

New York :: Chicago :: Boston

This advertisement is
one of a series. Next
month—Fudge

MARSHMALLOW

AT one time we were under the impression that we knew the limitations of marshmallow, and had worked out all of the major problems in connection with its manufacture. This may have been true, but it is a fact that from time to time, our Service Department finds many valuable bits of information, which are helpful. Some of the large difficulties incident to the making of this class of goods, are rapid drying, crusting, toughness and sweating. In the writing up of our formulas, we have taken it for granted that the candy maker had no special trouble and understood the manufacture of the goods in detail.

If you want to know which kind of marshmallow needs a hot room, and which should be kept cool between the time it is cast and packed, we can tell you. If you are planning a separate department for this class of work, our Service Department can give you many helpful hints. When writing us, if possible, give details about your working conditions and troubles, or ask about desired improvements and we will answer fully.

The coupon is for your convenience.

All formulas and information sent without obligation

M-4

Service Dept. THE NULOMOLINE CO., 109-111 Wall Street, New York, N. Y.

Please send me your formulas for
(Check those desired)

Nougat	<input type="checkbox"/>	Cast Creams	<input type="checkbox"/>	Name _____
Caramels	<input type="checkbox"/>	Hand Rolled Creams	<input type="checkbox"/>	Position _____
Fudge	<input type="checkbox"/>	Hard Candy	<input type="checkbox"/>	Firm _____
Marshmallow	<input type="checkbox"/>	Coconut Work	<input type="checkbox"/>	Street and No. _____
Jellies	<input type="checkbox"/>	Bon-Bons	<input type="checkbox"/>	City and State _____

What are you getting from White-Stokes advertising? The formulas we introduce are conceived from practical tests. Keep a scrap book of White-Stokes formulas and thus insure a reservoir of valuable ideas.

The Secret of Good Fudge

THERE is only one *right* way to make good fudge—use the *right* formula.

Fudge that is popular with your jobbers has “staying” qualities that permit packing in an attractive display form, and make it an “all-year-round” seller. The right formula protects against “checking,” “spotting,” crumbling and dryness, and preserves texture, flavor, and tenderness straight through the summer.

Tear out the formula given below, and pre-assure the satisfaction of knowing that *yours* is good fudge.

FORMULA

Place in your kettle 50 lbs. sugar, 5 lbs. corn syrup, 15 lbs. Superkreme, and water to start. Cook to 236°. Turn off heat and “fudge up” immediately. When grain is well started, add 1 lb. Fondax with nuts, and flavor to suit. Work through and pour out.

Make chocolate fudge by cooking 2½ lbs. cocoa in batch, and, when adding 1 lb. Fondax, add 2½ lbs. chocolate liquor.

Varieties: Cream, chocolate, raspberry (pink), lemon.



White-Stokes **FONDAX** *and* **SUPERKREME**

Superkreme is a new White-Stokes triumph. It is specially treated fresh 36% butterfat dairy cream and fresh milk. It insures what a caramel creme cannot—flavor, uniformity, and more milk solids. Write for full information.

—Manufactured exclusively by—

WHITE-STOKES COMPANY, Inc.

Pure Food Products—the Standards of the Confectionery Trade

3615-23 Jasper Place, CHICAGO

253 36th Street, BROOKLYN

THE FOUNDATION MUST BE RIGHT



THE EFFORTS of a lifetime spent in perfecting a product may be lost in a few weeks by an indiscreet "saving" on raw material.

¶ One bad batch, widely distributed, may mean a setback of years, and even a slight lack of uniformity will militate against the success of any product.

¶ The raw materials are the foundation stones, and they must be right—otherwise uniformity is impossible.

¶ VANILLIN is the very corner-stone of your Extract or Confection. You, therefore, cannot afford to be indifferent about the quality of this important flavor.

¶ VANILLIN-Monsanto is right—always right—for the purity standard (higher than that required by the United States Pharmacopoeia) adopted by us years ago, is rigidly maintained.

¶ Build with pure white VANILLIN-Monsanto and your product will stand on a firm foundation.



Monsanto Chemical Works
St. Louis, U.S.A.

Manufacturers of

VANILLIN-Monsanto (the pure white Vanillin)
and
COUMARIN-Monsanto (the original American Coumarin)

Stocks are carried in St. Louis, New York, Chicago, Minneapolis and San Francisco



A Chocolate Factory
devoted to the
exclusive manufacture of
High Grade Chocolate
Coatings and Liquors

*Samples and Prices
sent on request*

FORTUNE PRODUCTS CO.
416-22 South Desplaines Street
CHICAGO



Experience is a dear school,
but fools will learn in no
other, and scarce in that.

Benj. Franklin

We have learned—from ex-
perience—exactly what kind
of sugar to use for each kind
of candy. If you will write
us, we will tell you, and it is
important that you know.

Candy is all your business;
your business is only part of
ours.

**The
Franklin Sugar
Refining Company**

PHILADELPHIA, PA.

"A Franklin Cane Sugar for every use"

Granulated, Dainty Lumps,
Powdered, Confectioners, Brown,
Golden Syrup



Manufacture in
BIG VOLUME

of a small, special list of
coatings enables us to
maintain Ideal values high-
est in the field.

Your requirements prob-
ably come within the fol-
lowing coating classes:

**Dark Sweet
Light Sweet
Bitter Sweet
Milk
Vanilla
Fancy**

In each of these classes there
is an Ideal number to perfectly
match your need.

Only in exceptional cases do
we find it necessary to blend a
special coating.

If you are not already using
Ideal Coatings it will pay you
to try an Ideal number in any
one of the above divisions.

**Samples gladly supplied.
Write us today.**

"Ideal Once—Ideal Always"

IDEAL COCOA & CHOCOLATE CO.
39 PARK PLACE, NEW YORK
BOSTON—CHICAGO
MILLS—LITITZ, PA.



Something Better in Colors and Flavors



"First Producers of Certified Colors"

ATLAS Brand" Colors and Flavors offer to the Confectioner the strongest and most brilliant colors and the most delicate and delightful flavors. In fact their unusually high quality has made them the standard for many of the country's leading candy manufacturers.

"Atlas Brand" Colors

All Shades

Certified Combination Colors

Certified Primary Colors

Certified Paste Colors

Vegetable Dry Colors

Vegetable Paste Colors

Atlas Carmine No. 40

"Atlas Brand" Flavors and Extracts

Genuine True Fruit Flavors

Imitation Fruit Flavors

Conc. Imitation Fruit Flavors

Pure Vanilla Extracts

Imitation Vanilla Flavors

Maple Flavors

Send in this coupon, or write us about your color and flavor problems.

H. Kohnstamm & Co.,
11 East Illinois St., Chicago

You may send us your price list and special information on following colors:

Also the following flavors:

Name _____

Per. _____

Address _____

A trial quantity of "Atlas Brand" Colors or Flavors will be gladly sent on request with the understanding that they satisfy you, otherwise they may be returned at our expense.

H. KOHNSTAMM & CO., INC.

Established 1851

NEW YORK
83-93 Park Place

CHICAGO
11-13 E. Illinois Street



EDITORIAL

"The Candy Foreman"

The preliminary issue of **THE CANDY FOREMAN** tells its own story; a copy has been mailed to our subscribers this month. If you have not received your copy write for another, please. This pocket supplement with its specialized appeal direct to the interests of the factory department heads—the handy, easy-reading, spicy, breezy little sheet that it is—will enlist the hearty co-operation of every man with vision and interest in the constructive development of our industry and the economic importance and fitness of things in the trade press.

THE CANDY FOREMAN supplement has some great possibilities. We are anticipating its growth and popularity with great interest.

"It fits the Pocket and the Field."

A Tip from a Candy Consumer

924 Eighty-fourth Street,
Brooklyn, N. Y.

The Candy Manufacturer Pub. Co.,
Chicago, Ill.

... "I am sending to you a suggestion which came to mind a few days ago, and perhaps you may like to pass it on to some manufacturer of candy.

"High-grade candy seems to enjoy a fairly large sale at theatres. I have found, though, that when I have bought it the wrappings have been those of the standard boxes offered for sale—often with a transparent paper wrapping which rustles loudly when it is broken. I believe that if I were a candy manufacturer I would put on the market a box which I would call my "theatre pack," which I would specially put up so that it could be opened from the outer wrapper right down to the individual candy without the slightest sound. A little experimenting should make possible a very attractive box of this kind. If it were properly advertised in the theatre programs it would sell, too, I think, because it would remove a real annoyance to both the persons enjoying the candy and the folks near them.

"Very truly yours,

J. H. BULIN, JR.

The boss may determine your salary, but you yourself determine your worth. To get more make yourself worth more.

If all you get out of your job is contained in your pay-envelope, you've got the wrong job or you're the wrong kind of a worker—probably the latter.

Re "Old Man Specific"

While the schoolmaster was attending the theater recently he was interested in and rather sorry for the candy boy. Before the curtain rose on the first act the boy appeared with his customary boxes of candy and used a selling argument something like this: "Candies! Peppermints, caramels, almonds. All kinds of candy!"

For some reason this talk didn't sell much candy. When the curtain went up the schoolmaster had seen him sell exactly one small box of candy.

But during the second act intermission the candy boy changed his tactics.

He appeared with only one carton of candy, which contained a dozen boxes of chocolate almonds.

"Page & Shaw's Chocolate Almonds. Twenty-five cents a box," was his new selling argument. And within seven minutes he had sold the whole dozen boxes. —*Printers' Ink.*

Suite 601-604

30 North La Salle St., Stock Exchange Bldg.

We are pleased to announce that the publishing office of **THE CANDY MANUFACTURER** has been removed from Suite 1120 to Suite 601 to 604 of the Chicago Stock Exchange Building, same street address—30 North La Salle Street. We are much more pleasantly situated in our new home and with ample space and facilities to take care of the new and added responsibilities coincident with the expansion of our activities this year. **THE CANDY FOREMAN** supplement has made its debut and **THE CANDY MANUFACTURER BLUE BOOK** will follow shortly.

We extend a cordial invitation to all our readers to visit us when in Chicago. We are just one door north of La Salle Hotel.

Suite 627

44 Whitehall St., New York City

Our New York office has been removed from 107 Liberty Street to 44 Whitehall Street; Mr. Alex Hart, Jr., in charge as before. Our friends in the east are requested to make use of our New York office for any service which is within our power to render.

The salesman who "talks with" instead of "talking at" his prospect makes more sales and more friends.

What some of us need is more horse power and not so much exhaust.

A great salesman and philosopher said, "I believe that when I make a sale I must make a friend."



Hotel Traymore, Atlantic City, N. C. A. Convention Headquarters

Atlantic City Is Calling—May 23-25

How About It?

N. C. A. Bulletin, April 5, 1923.

Have you sent in your hotel reservations?

Have you sent for your railroad identification certificate?

How About Your Hotel Reservation?

Everybody wants to be registered at the Convention headquarters, which is the Hotel Traymore, one of Atlantic City's most famous hotels.

The hotel management is very anxious to please everybody, but there is a limit to the capacity of even a large hotel. May is a busy month for the Atlantic City hotels. Many conventions will be held in Atlantic City during that month. It is, therefore, of the greatest importance that you should send in your hotel reservation right away if you have not already done so.

Send your request for your hotel reservation to Mr. John C. Benson, personal representative, Hotel Traymore, Atlantic City, N. J., and he will give it special attention.

How About Your Railroad Identification Certificate?

An identification certificate will save you just one-half of a one-way fare. It is as good as a check for that amount. Look up our traffic circular of February 23rd, which will tell you all about it.

Don't lay this circular to one side and say there is plenty of time. There isn't plenty of time—the time to do it is right now. If very many of our members put

off sending for their identification certificates until the last minute, somebody is going to be disappointed. It takes time to fill in the names on 1,500 or more certificates.

By the way, when you send for your certificate be sure to give me the names of each individual member of your family who is going with you to the Convention. We must keep a record of each person to whom a certificate is issued and also the name of each member of the family for whom tickets are purchased on a single identification certificate.

It will avoid the necessity of writing you for this information if you will kindly keep this in mind when sending for your identification certificate.

For your own peace of mind you ought to attend to this at once.

Convention Program

The details relative to the Convention program are coming along very nicely. We will have an exceptionally attractive program.

It is going to be a Convention that will give you a lot of things to think about and take back home with you. You will feel sorry for the fellow who couldn't come.

Once more!

How about it?

Sincerely yours,

WALTER C. HUGHES,

Secretary.

Planning and Maintaining Production Standards and Schedules



The Second article of an extensive series on **Candy Factory Management Methods, Including Foremanship, Material Handling, Labor Management, Etc.**

Based on a special investigation of manufacturing problems in the candy industry

by Ralph G. Wells

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Exclusively for The Candy Manufacturer

CONTINUED success in the manufacturing of candy depends upon the ability

1. *To secure uniform results each time a batch of the same kind of candy is made;*
2. *To manufacture at the right time the quantities required to maintain a proper balance of finished stock from which orders may be filled promptly;*
3. *To keep costs down so that the product can continue to be sold at a profit.*

In order to accomplish this, every factor that may influence the time, the cost or the quality of production must be regulated so that its effect will be the correct one, otherwise the results will be uncertain. In this day when labor and materials are so expensive and competition for the dealer's business is so keen, candy manufacturers find that they are forced to develop more effective production control methods in order to keep down costs and turn out a product that will hold the dealer's business.

Factors Which Influence Production

THE principal factors which influence production can be grouped under the following classifications:

- Processes
- Materials
- Machines
- Equipment
- Labor
- Working conditions.

Together with these there should be consid-

ered the management methods used for handling production work, such as planning, supervision, inspection and the training of help; each of these plays an important part in the results obtained. There is also a feeling among some manufacturers that the questions of new designs and the development of new varieties should be mentioned as an important factor in production control. They include this because they believe that it is essential to lay out certain principals for the development of new varieties which will insure that time is not wasted in producing new kinds which will not sell, or which cannot be produced with existing facilities in large quantities at a reasonable cost.

Every manufacturer has his own method of handling the various factors mentioned above and while there is a certain amount of similarity between the methods used there is such a wide range of differences that it would be impracticable to describe all of them in detail. This article therefore, endeavors to present a composite picture of the best methods found. Furthermore, statements made by several of the more advanced thinkers indicate that they are contemplating improvements in their control practices which will give much better results. Several of these improvements are so constructive that they have been included in these articles in order to portray more accurately the progressive tendencies of the industry.

In considering the practical value of methods outlined in this and the succeeding article on the production control, the reader should appreciate that the installation of proper control

Mr. Wells' series will include the following subjects:

1. Management Problems and Control Methods in the Candy Industry.
2. Manufacturing Standards, Production Programs, Co-ordinating Sales and Production.
3. Production Control, Schedules, Routing, Despatching.
4. Material Control, Purchasing, Stores Keeping, Care and Handling.
5. Plant Location, Layout, Arrangement, Machinery and Equipment, Power Problems.
6. Selecting the Best Methods, Job, Time and Motion Study.
7. Financial Problems, Budgets, Cost Control.
8. Waste Elimination, Maintaining Production Standards, Quality, Time and Cost.
9. The Management Organization, Departmental Functions, Co-operation and Co-ordination.
10. Labor Planning, Policies and Practices.
11. Labor Management, Relations with Employees, Maintaining an Effective Working Force.
12. Looking Ahead, Sales and Business Forecasts, Experimental and Research Work, The Annual Overhauling.

methods does not necessarily mean a more elaborate system. In fact, the greater smoothness and ease with which production is planned and controlled is so much more simple than the confusion and disorder frequently prevailing under less systematic methods that the introduction of right system really simplifies the work of the company and relieves the executives of troublesome details which interfere with their effectiveness. As a general rule the net amount of work required for adequate control methods is much less than the amount wasted through lack of coordination, delays, spoilt work and unnecessary conferences where unsystematic methods are in use.

A candy plant cannot be operated without some form of control. It is merely a question as to which methods are the best. Shall the responsibility be distributed among department heads or centralized in one department? Can any of the methods be so organized and standardized that minor clerks can relieve executives and foremen of some of the details? Will any mechanical aids such as control boards, charts and forms be used so that information and plans may be more readily seen and visualized? The answer must depend upon the organization and upon the class of goods made. Experience has shown, however, that as soon as a plant grows beyond the "one man business" stage more definite and systematic control methods are needed, and that better results are secured by centralized control where plans are laid out in cooperation with foremen and department heads.

Production control in the broader sense means the management and supervision of all factors influencing production and the planning and scheduling of all work to be done so that goods of the right quality will be turned out as required at a reasonable cost. There must also be careful supervision over processes, inspection of material, control over equipment and labor together with a watchfulness of all cost factors, in order that quality may be maintained, costs kept down and work turned out on time.

Standards and Sales Analysis Necessary for Production Control

IT is necessary to establish definite standards covering every phase of the production processes as a basis for exercising the necessary control. These standards must include not only the formulas and operating processes but also the quality of materials, the working conditions, the condition of machines and equipment, the standards of labor performance and of time required for each step in the process.

When the production schedule is laid out, provision is made to have the necessary materials of the right quality and kind available for use as needed, and to insure that machines and equipment will be ready and in good running order. A sufficient supply of well-trained help capable of doing the work must be planned for. The necessary instructions for carrying out the schedules are issued so that each person will know just what he is to do and the time in which he is to do it.

Without exception, candy executives emphasize the need of accurate information regarding past sales and production experience as a basis for planning production schedules. One factory manager states that they expect to install more complete and centralized planning methods just as soon as they can accumulate sufficient information regarding sales to show fluctuations in orders for different varieties from year to year. This information will aid in fixing the maximum and minimum quantities of each variety to be carried on hand during each period of the year. He states that lack of such accurate information is the greatest handicap to production planning and control. This statement was endorsed by another manufacturing confectioner. When told that some makers thought that fluctuations in candy sales were too great to permit of intelligent planning beyond current needs, this man smiled rather knowingly and remarked that this opinion indicated that these men had never really analyzed their past sales and therefore could not appreciate how nearly customers' demands for various classes of goods correspond to sales

made in previous years. According to these two successful executives interviewed this month it is possible and feasible for candy manufacturers to plan much further ahead than they do at present.

Regardless of the differences of opinion as to the extent to which candy sales can be forecasted, it is apparent that the fluctuation in customer demand is one of the most difficult factors in production control. There is hardly a candy plant in the country except those making staple products where it is not necessary for the executives to make frequent estimates of the quantities that should be carried on hand. Such estimates are too often based on personal impressions and opinion, whereas a much more accurate method of making such estimates is to base them on analysis of actual past experience as shown by records of previous sales.

The problem of production control is further complicated by the question of the amount of working capital that a firm can afford to tie up in goods made in advance of actual sales. In order to obtain the lowest manufacturing costs, a plan should operate on a fairly even production schedule throughout the year, so that equipment may be profitably employed instead of standing idle and a permanent force of experienced employees kept busy. This, however, requires ample capital, as such a program will build up a larger inventory than many firms can afford to carry.

Storage capacity must also be considered in this connection, as a manufacturer cannot make goods very far ahead unless he has the storage facilities necessary to keep such goods in good condition until they can be shipped to the trade.

It is significant that the more successful plants are keenly alive to the growing importance of more comprehensive standards and effective methods of laying out the work, so that a fairly even and well balanced production schedule may be maintained throughout the year. They appreciate that in this day of keen competition when there are so many dependable lines on the market, neither the dealer nor the consumer will allow marked variations in the quality, in the taste, in the appearance or in the texture of the product and that for this reason they must work out definite standards of performance, supported by the necessary supervision and inspection to insure that candy of standardized quality can be delivered without delay to the dealer whenever he wants it.

Development of Manufacturing Standards

LEADERS in the industry emphasize the importance of definite manufacturing standards as the only sure method of securing uniform quality and product and also as an essential basis for the planning of work to get the required quantities out on time and to secure an accurate control over cost.

Such standards may be developed in various ways. Frequently, like Topsy, they just grow up. Many are traditions of the industry and of

the plant. Others come only as the result of long years of experience at the expense of many mistakes. The more accurate and scientific standards, however, are generally worked out as a result of numerous trial runs wherein cause and effect are systematically noted and recorded. The advent of the technical expert into the candy industry has greatly facilitated the establishment of more accurate standards especially where the laboratory is used to supplement experiments in the factory.

The best standards are those combining the scientific knowledge of the technical expert, the accuracy of laboratory test and the practical experience of the candy maker, tested and perfected by actual trial runs in the plant on a production basis. The manufacturer should exercise care that the prejudices of old school methods do not become crystallized into accepted standards until their accuracy has been proved scientifically.

The establishment of standards can be simplified if they are divided into two classes, namely: specific and general. General standards apply to all varieties of a particular class of goods, as for instance, the well known rule that chilled hard candies should never be placed in a warm room, as the moisture precipitation will result in their sweating. A similar rule would be one which related to the temperature of chocolate coatings used in hand dipping. In some plants much production is lost, either because the coating is too hot for the dipper's hands or is so cool that it does not work out well. In fact, the greater majority of standards required in a plant, are of this general type, so that when once definitely agreed upon, they need only to be classified and recorded in such convenient form as will make them readily available to all executives and foremen who should possess this knowledge. Such general standards also simplify the preparations of specific manufacturing standards relating to particular variety, as it is only necessary to give the details of the specific methods to be used in preparing each variety.

The standards mentioned above should include:

- (a) *The formula (recipe).*
- (b) *The kinds and quality of ingredients to be used.*
- (c) *The condition of each ingredient.*
- (d) *The order of mixing, the time and conditions under which each ingredient shall be introduced into the batch.*
- (e) *The temperature of cooking, the length of time the heat is to be applied.*
- (f) *Variations necessary at different seasons of the year or under differing weather conditions.*
- (g) *Tests by which operator can determine when the cooking is finished or whether the work is being properly done.*
- (h) *Details of the mechanical or machine operations, including the speed and feed of machines, the size of the batch and the length of*

time between each batch, and any other factor in mixing and making that may affect the outcome.

(i) General working conditions under which the work should be performed, the type of containers, such as cream trucks, mould boards, trays, starch moulds, and other equipment to be used, with specifications as to the length of time and the temperature required for drying or ripening.

(j) Precautionary rules regarding mistakes to be avoided.

(k) If the candy is to be covered or is to go through more than one process—as, for illustration, either gums or chocolate-covered goods—exact details, as indicated above, are given covering each operation.

(l) Waste allowance.

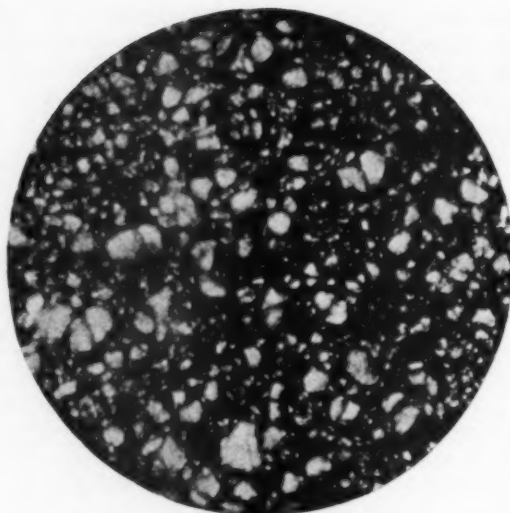
After the standards have been worked out tentatively, a sufficient number of trial batches are run through under the conditions specified. Various tests are made to check the results. Frequently, finished goods from the trial batches, are stored under different conditions and temperatures. Many firms make trial shipments of any radically new kinds of candy to selected localities at a distance from the plant. Not infrequently, six months or a year will elapse before the firm will feel satisfied that it has determined upon the permanent standard.

During these trials, sufficient cost data are collected to serve as a basis for standard costs.

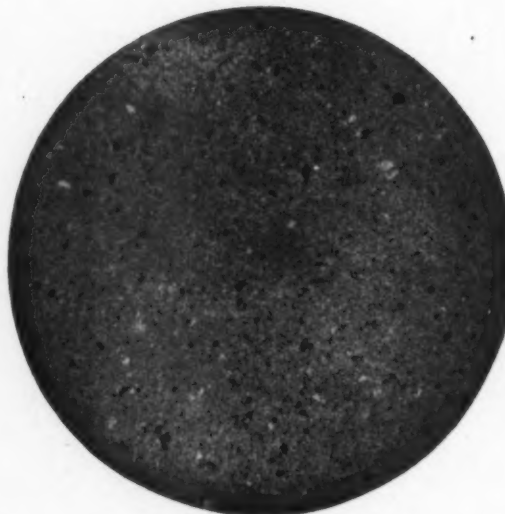
When the product is ready to be placed on a production basis, instruction sheets for each department participating in the process are prepared. Original copies are filed away as a permanent record, and a sufficient number of duplicates are supplied to the departments interested. By this method operating standards are established indicating exactly how each kind of candy is to be made, the equipment necessary, the working conditions which must prevail, the labor and the length of time required for each operation, as well as the exact amount of material needed to produce the batch of a given size and the number of pieces to a pound, including necessary allowances for waste and spoilage.

In order to fix exactly the standard of quality and appearance of product, one plant goes so far as to photograph several perfect pieces, arranged so as to show the tops, sides, and bottom of the candy, with one or two pieces cut to show the interior appearance and texture.

Another firm uses the microscope in its control of standards. There are shown below two micro-photographs of specimens of their standard chocolate coatings. These photographs were taken through a microscope which magnifies the specimen and its texture twenty-nine times. The first photograph is the unrefined coating as mixed, the second is the standard well refined. Each batch of coating is sampled and the specimen examined under the microscope to make sure that it has been refined to the required consistency. This is one reason why this firm's coatings are so superior and



Micro-Photograph of Standard Chocolate Coating as Mixed.



Micro-Photograph of Standard Chocolate Coating Well Refined.

have a uniform delicacy and refinement not found in many candies.

As similar standards are worked out and recorded for each class of product produced in the plant, it will be seen that there is gradually built up a collection of master instruction sheets covering every operation. The departmental copies of these instructions are on paper of a standard size so that they can be bound together readily in a loose leaf book and kept under lock and key by each foreman. These books do not become bulky, as each department receives only that portion of the standard instructions that cover its particular operation.

To some the foregoing may seem too elaborate, because in many plants the details are left almost entirely to the foremen of the different rooms. Yet it is safe to assert that a comparison of the results obtained where man-

ufacturing methods are left entirely to the memory and judgment of individuals, with the results secured in plants where careful standards exist, would show that the latter had far less waste, fewer spoiled batches, less lost time and were therefore able to get out larger quantities at a lower cost than the plant where rule of thumb methods prevail.

What Are Standards and Why

THE question as to whether or not the candy manufacturer should establish such accurate and detailed standards as mentioned above, is an exceedingly vital one. Some of the most successful manufacturers claim that it is absolutely out of the question to operate a large plant and produce candy of the right quality on a quantity basis at a profit unless processes, methods and conditions are standardized. They claim that only by such methods is it possible to train employees, and to turn out uniform batches of product successfully without excessive waste. These studies have indicated that the establishment of sound standards is a determining factor in successful production, and interviews with leading manufacturers in the candy industry indicate a decided trend of opinion in favor of written standard practice covering all of the manufacturing operations.

One reason why standards have not been adopted more generally in many plants is because the rank and file of the organizations do not appreciate their importance and are inclined to feel that they interfere with their prerogatives and freedom of action. Others claim that so many variables enter into the manufacturing of candy that it is impossible to determine exact methods which should prevail. It may take time to educate the practical man of the old school to this viewpoint. Frequently it is found that such men have in their own minds just as rigid and definite rules for handling each batch as are set down in written standards; the only difference being that they alone possess them and that they may vary them from day to day, depending on conditions and their own personal feeling, whereas in the plants where standards have been officially adopted, the methods agreed upon represent the composite opinion of several expert men instead of the idea of one individual, and furthermore, the instructions are on file for the guidance of the new employees.

Another reason for standard methods is the fact that the average employee is better satisfied where uniform practices prevail, as there is less likelihood of their being blamed unfairly for poor quality when the real cause may be beyond their control or one which they do not understand. Nothing is so disorganizing and so detrimental to morale as lack of standards.

Standards are conducive to a smooth-running production schedule. There is less likelihood of delay and lost production from imperfect product or spoilage. Without question, manufacturing standards are the most fundamental element

of modern management in the candy industry. Standards do not, however, take the place of "candy sense" or that knack of turning out a good product which comes only from experience. Their function is to expedite work and reduce to a minimum the chance of spoilage and waste.

In some quarters there is a feeling that quality means the improving of the product each time it is made, whereas uniformity is really the essential point of quality. When the grade and flavor, taste, appearance, and texture of a piece of candy has once been established, the maintenance of quality consists in keeping these factors uniform in each batch instead of changing them continually for improvement.

Standards should, however, always be progressive. The art and science of candy making is progressing so rapidly that an advanced grade of today may be an inferior quality next year. There is constant need for eternal vigilance to improve standards and to keep them in advance of competitor's improvements. Instances might be cited of lines that once were considered leaders but which, because of improvement made by other manufacturers, seem by comparison to have gone backward.

Maintaining the Standard

STANDARDS alone will not insure the turning out of a uniform quality. Some method of control must be established which will insure that these standards are kept up. This is generally accomplished through the adequate training and instruction of employees; the maintenance of such supervision by foremen and their assistants as will see that these instructions are carried out; and the inspection of each batch as frequently as is necessary to make sure that all goods are up to the standards. In addition, the maintenance of quality depends also on the following:

- (a) Selection of the right material, properly inspected before its use, and having it in the best condition for such use.
- (b) The maintenance of machinery in the right condition, ready for work, clean, in proper running order, and adjusted to perform the operation which the instructions call for.
- (c) The selection of the right help to do the work.
- (d) The training of each person to perform his work in the right method.
- (e) The necessary supervision and inspection which will insure that all of the foregoing are properly carried out.

It is essential that the inspection be frequent enough to fix the blame for any poor workmanship. For the proper control and correction of employees, it is essential to know just where a mistake occurred. If inspection is made only after two or three processes have been performed, it is generally difficult to locate the cause of trouble. All batches should be inspected immediately after each major operation.

(Continued in Next Issue)



II—Use of the Laboratory in Selecting and Caring for Raw Materials

The Sixth of a Series on Purchasing Confectioner's Supplies

by A. Adams Lund

WE have taken great pains to select clean, sound and wholesome raw materials. In our specifications we have exacted those standards of quality which experience has taught us are best suited to our individual needs. The arrival of each purchase has set in motion the careful, thoroughgoing routine of laboratory supervision. Altogether, we have done a creditable bit of purchasing. We are proud of our work, proud of the system out of which it evolved.

But not too fast! Just then an air-mold drops in the butter; a dusty, innocent-looking moth may be seen emerging from the almonds; elsewhere a rat is on the verge of discovering our newest arrival of peanuts. Then come long periods during which the infected materials are held in temporary storage under constantly changing conditions of temperature and humidity, from which they are shifted to crowded process rooms, to be finally doled out to the candymaker weeks and often months after their entry in the factory. That it is possible to arrest the tearing-down processes brought about by certain of these agencies has been definitely established. If the deterioration is detected in time we can prevent a general impairment of quality or at least the complete destruction of the material. Accordingly we must adopt some method of periodic inspection subsequent to the original examination at the time the goods are entered.

Likewise, because of the inability of the so-called "practical" man to determine what chemical, bacteriological and entymological changes are taking place, the responsibility for these inspections must be placed upon a laboratory equipped to uncover them in their early stages instead of waiting until the urgent need of the material outweighs considerations of quality or the defect turns up unexpectedly in the finished goods.

If deterioration is permitted to continue to a point where it attracts the attention of the raw material man, it is usually too late to effect a cure. With canned goods, especially canned apples, unless fermentation is checked by steril-

ization before sufficient gas is released to cause swelling, the first exploding tin may be immediately followed by a barrage. Or let us consider nut meats. When the first few worms give warning of infection, cold-storing and reeleaning are resorted to by the manufacturer, unfortunately unaware of the fact that it is the moth which, unnoticed some time before, infected the goods with microscopic eggs, many still unhatched, which neither the chill of storage nor subsequent resifting will destroy or remove.

Nor, since the regular factory inventories involve a certain element of haste, should the chemist attempt to make his inspection at such times. Instead, his periodic investigations should be carried on independently so that he may be unhampered to conduct research and treatment if necessary.

With a little thought to the convenience of the examiner in arranging stocks for temporary storage, a great deal of time can be saved and labor avoided. Practical experience will suggest a number of short-cuts which may be adopted to improve the efficiency of the inspection. For instance, some manufacturers stack cases of canned goods side on side and knock off the covers so that the tops of the tins are at all times visible and handy of access.

Aside from the inspection of temporary storage stocks, the scope of the examination must be such that it includes materials carried on "process of manufacture" inventories and finished goods. Frequently the main stock of essential oil, for instance, may be in perfect condition, while a portion of it, poured into a separate container and accidentally left uncorked in the hard candy room may have become rancid. Similarly, the darkened color or lack of proper texture of a batch of finished caramels may often be traced to the souring or other defect of the milk ingredient. Let us consider just what are the changes which must be looked for and guarded against under these conditions. Following are the important changes of which note should be made:

1. Entymological (insect matter).

2. Bacteriological (including fermentation, souring, etc.).
3. Mould.
4. Damage by rodents.
5. Evaporation (loss of weight or consistency).
6. Organic:
 - (a) Oxidation (action of air on terpenes, etc.);
 - (b) Polymerization (action of light on oils, colors, etc.);
 - (c) Acidity (including rancidity);
 - (d) Other organic or chemical changes, as: inversion; conversion; acquisition of foreign odor and flavor due to proximity, etc.
7. Physical:
 - (a) Crystallization;
 - (b) Loss of structure (by absorption or otherwise);
 - (c) Acquisition of inorganic matter (dirt, refuse, etc.).

(A study of the causes of deterioration in storage will be included in an ensuing article in this series entitled "Care of Raw Materials in and out of Storage.")

Then follows sampling and the routine of analysis already described, after which the parcels may be suitably tagged with the inscription, "Inspected by laboratory (date...., Condition,)" or otherwise identified for the convenience of the stock man and plant superintendent.

As the inspection progresses, the chemist will see that infected material is carefully segregated from the regular stock, plainly ticketed with the nature of its disqualification, and later, when the analyses are complete, prescribe what treatment or salvage he believes to be necessary or desirable.

The final judgment is as much the concern of the buyer as it is of either the chemist or the superintendent, for if, as often happens, the cost of salvage approximates the value of the resulting material, or yields something inferior to what you would ordinarily use, it may be the part of wisdom to dispose of it immediately rather than suffer a greater loss or jeopardize the quality of your product. When it is necessary to condemn the material, the attendant process of destroying it must be performed swiftly and completely to prevent any portion of it from finding its way into your candy or offending the gaze of the visiting health inspector. But the benefits of a thorough laboratory examination do not end here.

According to all well-established rules your stock clerk distributes raw material to the various factory departments in the order in which they become part of his stock, i. e., using the older lots first. This system has rarely been challenged because, although the occasional deterioration of a lot of goods may be directly due to the delay which it involves, the loss is almost never attributed to this cause. Upon consideration, however, we realize that the sequence in which goods are received does not

necessarily indicate the age of the raw material, a later purchase often coming from a previous crop. Then, too, lots of the same age may not possess identical keeping qualities, either because of some organic inferiority or the external infection of one. Consequently the sequence in which materials are used should be determined by the laboratory. (The value of time charts in this connection will be referred to later.)

"An Ounce of Prevention"

WHEN a resume of the examiner's findings has been placed in the hands of the superintendent and buyer, the responsibility of these latter for the subsequent care of the materials is technically at an end. Where they leave off, the chemist begins. Were we to disregard the human element, there might be little need of further supervision; as it is, he must follow the materials until they reappear in the finished product, which includes looking after the humans with whom they come in contact along the route. First there is the danger of the materials becoming contaminated during their handling or manipulation. Workmen with dirty hands, utensils that are not kept clean, dust-laden air are constant sources of infection which ignorance on the part of the manufacturer will neither cleanse nor excuse.

A certain manufacturer had been having trouble with his centers. No matter how carefully he prepared the batch or how carefully it appeared to be handled, the cream had a way of smearing all over the box; until he became sufficiently disgusted with the business to overcome his prejudice against the scientific world and call in a bacteriologist. This gentleman proceeded, in what appeared to him to be a very unbusinesslike way, to rub some of the dirt off the tables, the walls, the floor and the ceiling with a small cotton swab. Then he lined up the factory force and insisted on scraping the palms of their hands. He labeled each scraping very carefully and departed with them, leaving a very surprised and incredulous manufacturer to brood over the queer tricks of the professional scientist. Very soon a letter came, instructing the manufacturer to paint the walls of the starch room. Still dubious, and complaining to his friends that "the paint in the starch room ought to be good for another couple of years yet," he complied with the instructions and waited grimly for the bursting centers to vindicate his distrust of the profession. But alas for his expectations! Stacked in their accustomed positions, the starch trays rubbed up against the wall, but found no germs to take on and nourish. Naturally, since none were communicated to the centers, the centers did not blow.

In another instance, the source of infection was traced to a system of overhead cloth-covered cooling pipes, which received a constant supply of fresh bacteria from the use of common towels in the adjoining lavatories. The germs were communicated to the dust in the

air, the dust settled on the pipes and the vibrating of the machinery caused it to drop in an invisible concentrated stream on the dipping tables below.

Aside from the adoption of new and improved methods of sanitation, there is no better way to prevent contamination from these sources than by compelling absolute cleanliness on the part of the employees through strict laboratory and medical supervision. Certain of the manufacturers have gone so far in this direction as to have their nurses give short weekly lectures on the importance of cleanliness in the handling of food products.

One of the best methods of safeguarding raw materials while in the factory is to carefully supervise the manner in which these materials are handled (by which is meant stored, transferred or unpacked). A buyer for a well-known supply house, himself a chemist, was being shown through a candy factory. As he passed by a barrel of tartaric acid in which a tin scoop was imbedded, he paused and said half jokingly, "And this, I suppose, is where you put in the 'heavy metals'." Slowly but surely the tin was being corroded by the acid and the iron content absorbed. Time and again you have seen a damp or dirty scoop thrust into a barrel of gelatine (the most fertile culture media known to bacterial science!) and there left to bring about the contamination of the gelatine and the resultant blowing or liquefaction of the goods into which it is made. Cases of dates split in half with a hatchet, their contents dumped on the floor; oils poured in unwashed bottles; bins used promiscuously for one material after another with seldom an attempt at cleaning between times; these we have with us always. Even materials which are apparently immune to careless handling are only moderately so. How many confectioners realize that Pennsylvania cherries will pick up sulphur dioxide from the air if the barrels are left open? This is particularly true in buildings where coal containing a large percentage of sulphur is being burned for heating or power purposes. Or realize that with items like pecan halves there is a relationship between rough handling and percentage of pieces which may almost be reduced to a formula. To devise an effectual and yet simple means of safeguarding these materials, aside from requiring a thorough knowledge of the factors which influence their deterioration, requires the fresh viewpoint of the scientific mind, free from the enervating influence of long-established custom.

Another preventative measure is occasional disinfections, which, however, must be conducted with intelligence and discretion to prevent their injuring the very materials which you wish to protect. For instance, the tendency of materials consisting wholly or in part of fatty substances to absorb odors from the air makes these materials the sure prey of a great many otherwise harmless agents.

The institution of clean-up weeks, coupled with campaigns of various sorts, is another instance of the practical use which may be made of a laboratory in protecting raw materials from needless contamination.

Determined to stop the ravages of moths, the chemist of one concern recently hit upon the slogan, "Swat the Moth." Whether the help will come to work equipped with moth swatters remains to be seen, but the value of this gospel as a means of enlisting their assistance in destroying the pest should be clear.

The precautionary ticketing of materials which are to be used for a specific purpose should not be entrusted to persons incompetent to judge the difference between qualities or grades, but to a laboratory capable of determining these differences with accuracy. Imagine the plight of your stock man if he were called upon to decide whether a lot of bulk color were vegetable or aniline! Yet a surprising number of factory men believe they can make equally impossible distinctions. Which is one reason why sulphured fruits are constantly finding their way into Pennsylvania, while the Minnesota and North Dakota authorities revel in fines on candies containing aniline instead of vegetable colors. It should be the chemist's duty to plainly mark goods of this character when they arrive at the factory in order to prevent the possibility of confusion later on.

A portion of the chemist's time might be profitably devoted to research of temperature and humidity conditions, etc., with a view to determining the suitability of various factory locations for the storage of different materials. If sufficient study is given to this subject, deterioration through natural causes may be reduced to a minimum. The cellar, for instance, might be a satisfactory place to store cane sugar, but too damp for maple sugar. Or, if you were pinched for space, you might put a few barrels of honey in the boiler room; to do the same thing with molasses would prove somewhat more eventful. As for the effect of weather conditions on the suitability of various locations for storage purposes, the charts of the U. S. Weather Bureau, if interpreted properly, will enable you to forecast the approach of hot spells, frosts, wet spells and the like, so that the materials may be transferred or stored accordingly. Many a lot of perishable goods has been saved from ruin simply by anticipating these periods and preparing for them in time. It is within the sphere of your chemist to determine what effects these changes will have on your raw materials, and he should relieve the buyer and superintendent of the responsibility for the necessary precautions. Great strides have been made the U. S. Department of Agriculture in ascertaining how materials react to different influences in storage and your chemist would do well to get in touch with them as well as the various local bureaus when a problem gets beyond the scope of research. Furthermore, they may save his going over

ground which they have already covered in their experiments.

Treatment and Salvage

WE all know, however, that, despite all precautions, an occasional lot of material will go bad, and it is for this reason that your chemist must have an adequate knowledge of the best methods of treatment and salvage. Of the two operations, treatment is by far the more important, inasmuch as it precedes and prevents the actual deterioration of the material. The methods now in use come, roughly, under two classifications, physical and chemical.

It has been successfully demonstrated that many raw materials may be preserved for long periods by means of physical treatment prior to storage. One of the big confectioners had been having trouble with nut meats. The nuts were bought of "sound, merchantable quality"; as far as could be seen, they complied fully with these specifications. During their stay in the factory they were carefully protected from infection, made up into candy and then distributed to the trade. Then followed the inevitable return of wormy candy and a flood of hostile criticism from supposedly outraged customers.

The man who solved the problem was the house chemist, a chemist by profession and an entomologist by inclination. Through his efforts a system was evolved which destroys not only worms and pupæ, whose physical evidences are visible to the eye, but the minute colonies of eggs which precede both these stages, and are often laid in the nut while it is still attached to the tree. Up to this time there was no method by which these eggs could be killed without impairing the quality of the nut itself. During the course of this man's investigations, the writer witnessed the spinnings of many hundreds of thousands of worms of several different varieties, saw moths studied under glass, and little brown spots representing millions of larvæ brought slowly to form under electric incubation.

Since the discovery of this method, this firm has subjected all of its nut meats to this treatment before releasing them for use by its factories. Suggested to one of the biggest nut packers in Spain, this man said: "It would be a great thing if all nuts could be treated in this fashion before we ship them, for, barring re-infection, you would then get perfect goods. On the other hand, we could not do it, as the added overhead would put our prices out of line with those of our competitors." The remarks of others contained this same note of indifference. It would be a wonderful thing for the "other fellow." Until the packers come to realize the importance of this matter, manufacturers will probably have to continue to safeguard their own. The results obtained in this instance are merely indicative of the great things which may be attained through scientific research along these lines.

Perhaps the more familiar and widespread

methods of treating raw materials for preservation are the chemical. The continual and haphazard "doping" of these materials with agents like benzoate of soda, bisulphite of sodium, and the like, frequently injures more than it preserves. Where it is absolutely necessary to employ them, they should be issued only on the prescription of the chemist, instead of permitting the factory people to throw in a handful whenever they see fit. Lots so treated should be permanently marked and a record kept of the lot number, amount of preservative used and date of treatment. In this way it is possible to avoid the "redosing" or otherwise untimely manipulation with these powerful chemicals.

The salvaging of materials partially destroyed or in some way impaired as to quality may result in the legitimate saving of thousands of dollars; for salvage, let it be understood, does not necessarily imply the contamination or infection of the material. Powdered sugar may become lumpy and require to be re-milled; cherries may fade and need re-coloring. Where there is the least possibility of conflict with the health authorities as to what constitutes legitimate salvaging, communicate with them and let them tell you how far it may be practiced and what steps it is necessary to take to make the re-cleaned and purified product fit and wholesome. If there is no danger of violating these standards, put it up to your laboratory to decide to what extent salvaging is practicable. In certain of the larger cities there are commercial agencies which make a specialty of re-cleaning nut meats, dried fruits, and the like; resifting flour, etc. The charges are nominal, often less in fact than it would cost you to perform the operations yourself.

Where it is impossible to salvage the material satisfactorily or where there is the slightest suggestion of unwholesomeness in the finished product, it cannot be advised too strongly that the material be either destroyed or sold to some concern that can make use of it for technical purposes or subject it to a further course of refining. This latter method is seldom the most profitable, but it is frequently the most expedient. Essential oils no longer suitable for flavoring can be sold to manufacturers of cheap toilet preparations; oils and fats to soap manufacturers; nuts to oil pressers; gelatine to technical users of the product, and so on.

(Continued in May Issue)

Our greatest glory is not in never falling, but in rising every time we fall.—Goldsmith.

If fear in all its phases could be eliminated from the human mind, civilization would go forward with leaps and bounds.—W. F. Gibboncy.

Authority:

It makes some men wise and some men foolish.

It builds one man up and throws another man down.

It is the supreme test of character.—Casson.

Put Your Equipment on Your Payroll

WE ARE indebted to the editor of *The American Contractor* for the above idea and privilege of quoting from an article by Ernest F. Ayres in their issue of January 6th. The subject has an application to the candy industry which will seriously interest every student of factory costs.

To determine the wage scale which a piece of machinery is entitled to, estimate the life of the machine in terms of its production. For instance, estimate the number of years' service in the life of a truck and compute its daily cost over that period. The same plan might be applicable to factory equipment. For instance, estimate the life of an enrober or mogul or mixer, etc., in terms of its pounds production. Make a conservative estimate of the amount of goods a machine should turn out to "pay its way" and justify its cost, and then pay it a wage per thousand pounds of goods it produces or whatever unit seems best. This amount goes to the credit of the machine, of course. Then charge it with repairs. When the credits amount to its replacement value, the account may be closed if you wish.

In this way you can detect accurately whether a machine is a liability or an asset and to what extent. You also know when you can afford new machinery and the exact status quo of your investment in factory equipment.

The following article has its direct application to contracting machinery, but the principle involved has a parallel with manufacturing conditions in other industries.—EDITOR.

EVERY business man knows that a special fund should be laid aside each month to cover depreciation of equipment. He knows it in the same way as he knows that he ought to amortize his income tax, and he pays about as much attention to one fund as to the other. Equipment is replaced out of cash which he had fondly imagined to be profit, and his income tax greets him each year as an unexpected and unpleasant surprise.

A. S. MacDougall, maintenance engineer for the Idaho bureau of highways, has solved the depreciation problem. No chance for his bookkeeper to neglect to make the proper entries in the equipment fund, nor for the boss to decide that the machinery is in such good condition that the replacement allowance can be shown in the profit column for that particular job. Not the slightest chance—for each piece of machinery is on the payroll and is entitled to all the money that it has earned.

When he took over the job of keeping all the state highways in repair, Mr. MacDougall found himself saddled with a fleet of trucks and automobiles sufficient to have supplied the hosts of Pharaoh. A few of these could be rented out to contractors, but the bulk of them were sent out to the district engineers for use in maintenance work. Then the repair bills began to roll in. This was all right if they came in during the life of the job, but how about receiving a bill of \$500 for garage repairs after the books had been closed?

Another Matter That Was Wrong

And there was another interesting feature.

A truck would be used on two or three jobs without any heavy expense for upkeep. Then it would go to another job, be used for a few days, and then suddenly go to pieces. It was not fair to charge the entire cost of repair to this one job, but there had been no funds set aside on the preceding jobs to go toward the payment. The repairing of one mile of highway might show a higher cost than the repairing of a five-mile section in the same county, if enough trucks happened to break down on the smaller job. Of course, it was never the fault of the driver in charge when damage occurred. The damage was always due to the negligence of the man who had had the machine yesterday, or last week, or last spring.

"Mac" puzzled over this problem for some time, and then discovered a way in which he could keep track of the expenses on each truck and, incidentally, of the efficiency of the drivers. The remedy was simple enough, at that. He put each truck on the payroll, just the same as the laborers. Every day the truck worked it received \$7.50, which was banked to its credit. That sum belonged to the truck just as much as the driver's wages belonged to him after he had earned them. When repairs were necessary, the fund was drawn upon to pay the bill, and Heaven help the responsible party if these "doctor's bills" ate up too large a proportion of the salary.

The Devil and the Deep Blue Sea

The district engineers found themselves between Beelzebub and the Mediterranean. The \$7.50 per diem was charged against their allot-

Continued on page 37.

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With the Manufacturers of Machinery and Factory Equipment

*(This is the Candy Equipment Insert)
Kindly mention this insert, when writing the
advertisers in this section.*

The following manufacturers of candy and chocolate machinery and factory equipment invite the special attention and consideration of candy factory superintendents to their respective sales messages presented in the advertising pages of this issue:

BENTZ ENGINEERING CORPORATION.....	38
BUCYRUS COPPER KETTLE WORKS.....	36
CANDY AND CHOCOLATE SPECIAL MACHINE CO., INC.....	35
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STURTEVANT COMPANY, B. F.....	30
VACUUM CANDY MACHINERY CO.....	36

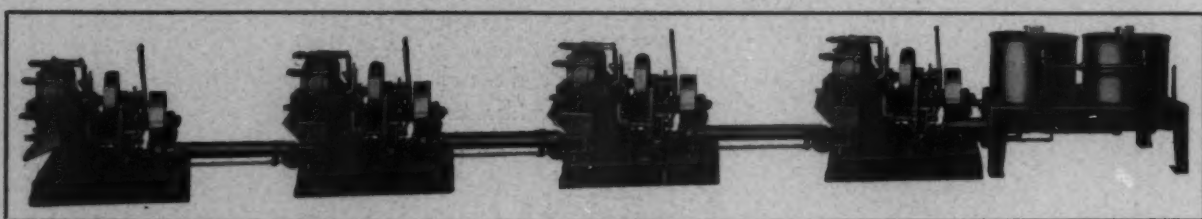
To the best of our knowledge the products advertised in THE CANDY MANUFACTURER have sufficient merit to warrant the serious consideration of our readers: we will appreciate any information to the contrary. We stand willing and ready to assist our subscribers in any possible and reasonable way in connecting with reliable sources of supply or in obtaining redress in any unfair or unsatisfactory transaction with our advertisers, though we assume no obligation in accepting the advertising.

Therefore, when all other things are equal, kindly give preference to the advertisers in THE CANDY MANUFACTURER. If you do not find just the item of equipment or supplies you are looking for, remember you have free access to our Buyers' Directory files.

THE CANDY MANUFACTURER PUB. CO.

30 North La Salle Street, Chicago

Bausman Battery



The Very Latest in Chocolate Making Machinery

The Bausman four-machine Battery produces high grade coating, replacing such machines as the Sugar Mill, Melangeur and three and five-roll Refiners, at a great saving of floor space, horse-power and labor.

It is the newest and most thoroughly up-to-date machine of its kind on the market. It provides a modern, clean and efficient process of manufacturing coating, with a minimum investment, and under ideal conditions:

Write us for further information

NATIONAL EQUIPMENT COMPANY

Largest Manufacturer in the World
of Candy and Chocolate Machinery

SPRINGFIELD, MASS.

U. S. A.

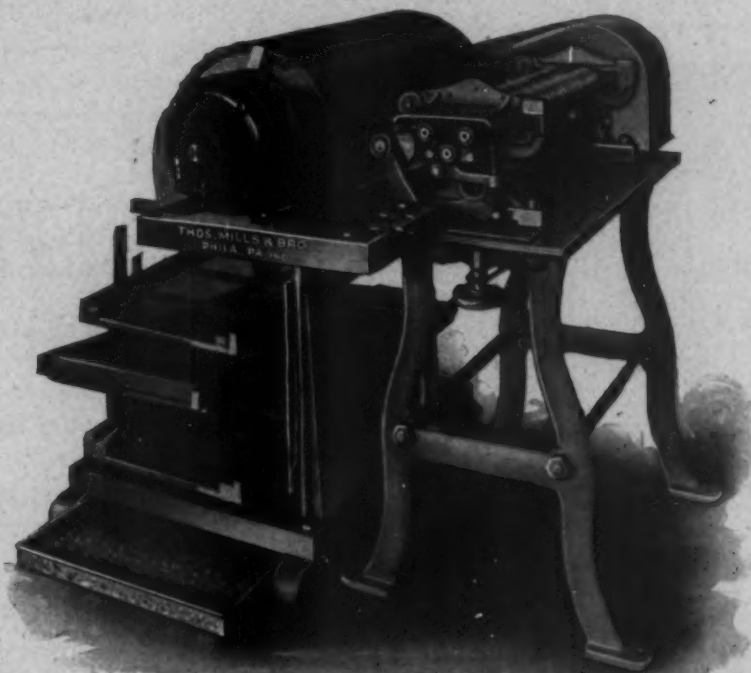
Thomas Mills & Bro., Inc.

1301 to 1315 North Eighth St.

Philadelphia, Pa.

AUTOMATIC SEAMLESS HARD CANDY MACHINE

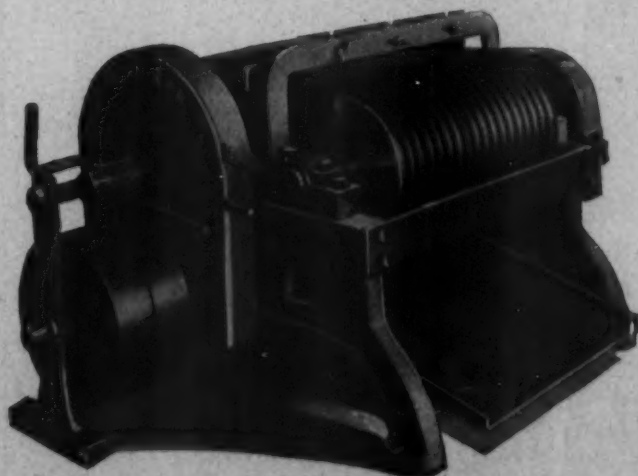
Send for pamphlet on this machine.



Have You Our Latest Catalogue on Entire Line of Candy Factory Equipment?

If not, use coupon on opposite page and let us quote you on the kind of equipment you are especially interested in.

No. 10 BALL MACHINE for COCOANUT, CREAM and CHICLE



**HEADQUARTERS
FOR CANDY
MACHINERY,
TOOLS AND
EQUIPMENT
SINCE 1864**

"If it's listed with Mills it's a success"

Engineering

Placing your problems in the hands of this organization gives you the benefit of all the experience of the foremost engineers in the country on air conditioning systems.

These specialists who are nationally known and recognized, have made air conditioning their life study.

They will be glad to refer you to an installation near you or give you the names of concerns in your own business who have successfully installed our air conditioning systems. You may then get in touch and understand why Sturtevant-Fleisher Systems are preferred.

Whatever your problems or conditions, these engineers who have installed hundreds of systems all over the country will be glad to cooperate with you.



Atlanta
Boston
Buffalo
Chicago
Cincinnati
Cleveland
Dallas

Detroit
Hartford
Los Angeles
Minneapolis
New York
Philadelphia
Pittsburgh

Portland
Rochester
St. Louis
Salt Lake City
San Francisco
Seattle
Washington

 **Sturtevant**
PUTS AIR TO WORK
Hyde Park, Boston, Mass.

W. L. FLEISHER & CO., Inc.
31 Union Square West
New York, New York

Announcing—

**"It Fits the Pocket
and the Field"**

Sample copy
of Preliminary
Number will be
sent immediately
on request.

The Candy Foreman

A Semi-Annual Supplement, Published June and January by
THE CANDY MANUFACTURER PUBLISHING CO.
30 North La Salle Street, Stock Exchange Building, Chicago

Vol. I

JUNE, 1923

No. 1

A Breezy, Semi-Serious Pocket Edition for
Working Foremen, Candy Makers and
all practical men of the Candy Industry

Distributed Free to
Department Heads
of Subscribers to
**The CANDY
MANUFACTURER**



January, 1924—Foreladies' Number
Issued Simultaneously with Superintendents Number of The Candy Manufacturer

**Mailed Free to Department
Heads upon order of executives
(To others, 15c per copy)**

We prefer to mail The CANDY FOREMAN only upon request
and instructions from candy superintendents or other executives.

(Exact
size)

The GREER COATER *the*

and Packing Unit

**No Paper
Plaques
Necessary**

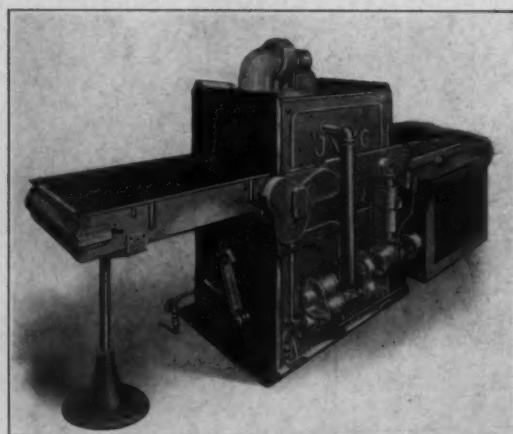


A Complete Unit—Coating, Drying,

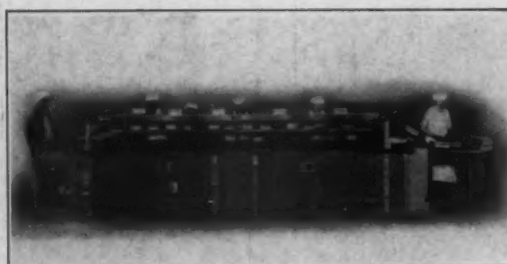
Constructed to give results in quality, quantity and

ELIMINATES PAPER PLACES

The Chocolate Coating Machine unit the candy industry has been



The Greer Coater



Greer Drying, Conveying and Packing Machine

This machine places before your packers 200 plaques of perfectly dry goods each hour—a steady stream of finished goods direct from your Coater or Enrober.

*May send
details for
a price*

WE GIVE AN ABSOLUTE GUARANTEE THAT OUR MACHINES

119-137 Windsor Street

J. W. GREER

Manufacturers of Confectionery Machinery



R *A Triumph as a Production Unit* *the last word in machine design and performance*



**No Paper
Plaques
Necessary**

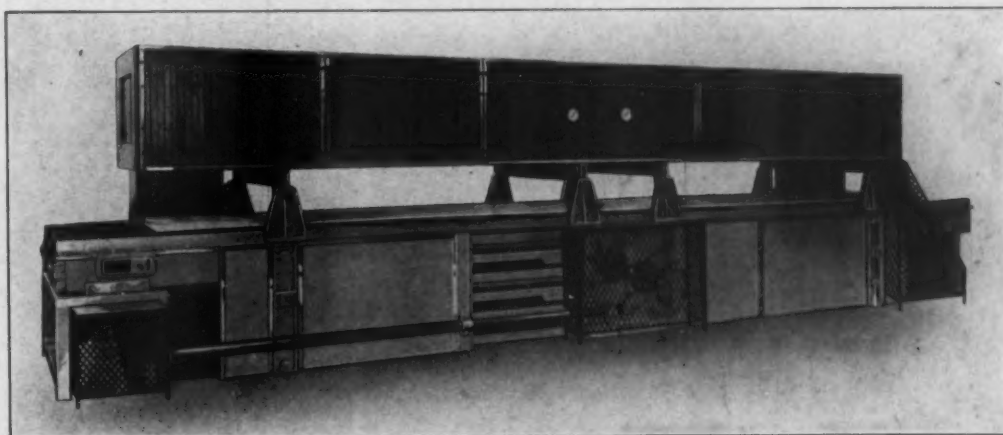
ing, lying, Conveying and Packing

antitend economy. No lost time between machines.

PLACES AND TRANSFER GIRL

ry have been waiting for. Equally good for candy, biscuits or cakes.

May send you
detailed information
at prices



The Greer Chocolate Bar and Ten-Pound Cake Machine showing bunker and machine complete

Guaranteed to Produce 20,000 lbs. per Day

OUR MACHINE DOES NOT INFRINGE ANY EXISTING PATENT

GREER CO.

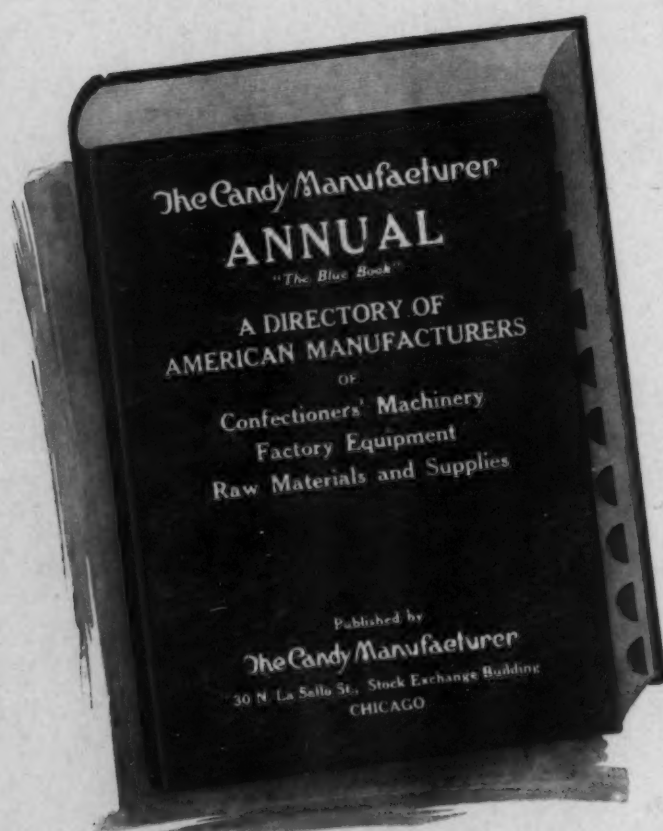
CAMBRIDGE, MASS.

tion Machinery that Pays Dividends



Where to Buy Confectioners' Supplies and Equipment

While this book is being compiled we would be glad to receive inquiries from our subscribers regarding sources of supply or any problem in purchasing. All information in our Buyer's Directory files is at your disposal.



CONTENTS:

In addition to the Directory feature The Blue Book will contain:

An index of all associations, national, territorial, state and local within the confectionery industry, and the national associations in the allied industries.

Rulings, regulations and legislative situation affecting confectionery supplies and products. Statistical information on the industry. Reports and surveys of special value to the purchasing and sales departments.

A review of books, periodicals and technical literature on candy factory management, methods and materials and the industry in general.

A directory of trade names.

The data for this candy manufacturers' buying guide is being compiled and the book will be issued early in 1924. In the meantime our subscribers have access to all information in our directory files. We will be glad to receive your inquiries regarding sources of supply.

The Directory Section

of the Blue Book will contain the following classifications:

- Directory of manufacturers of chocolate and candy machinery, refrigerating machinery, factory equipment, tools and utensils.
- Directory of manufacturers and importers of confectioner's colors, flavors, essential oils, gums, extracts and essences, gelatines, starch, corn syrup, molasses, honey, milk products and all raw materials.
- Directory of manufacturers of chocolate coatings, liquors, and cocoa butter; coconut oils, butters and cocoa butter substitutes.
- Directory of brokers and importers in cocoa beans, coconut, fruits, nuts, etc.
- Directory of sugar brokers and refiners.
- Directory of peanut brokers and growers and manufacturers of peanut machinery.
- Directory of manufacturers of paper boxes, fancy, set-up and folding; candy containers—tin, glass, redwood, baskets, leather, etc.
- Directory of manufacturers of paper box liners, laces, bonbon cups, seals, trimmings, etc., box papers and box tops.
- Directory of manufacturers of box wraps, bar wraps, foils, waxed papers, dipping papers, bags and paper specialties.
- Directory of manufacturers of shipping containers: corrugated, solid fibre and wood boxes, and pails.
- Directory of lithographers and manufacturers of "Dealer Helps" and advertising specialties, window trims, store signs, display cards, hangers, premiums, souvenirs, etc., etc.

**The Candy Manufacturer
Publishing Co.**

30 N. La Salle St., Stock Exchange Bldg.
CHICAGO

Mr. Superintendent:—

Equipment that will help you get better results from your factory hands in 1923:

Starch Drying and Reconditioning Equipment—

Eliminating hotrooms, excessive heat and doing away with discolored starch; installed in the largest factories in the country.

Five Roll Steel Refiners—

Large size—greatest capacity.

Continuous Vacuum Cookers—

Plastic Presses and Automats—

Most modern installation for the productive manufacture of filled goods of quality.

Improved Chocolate Moulding Machines—

Endless.

Air Conditioning and Refrigerating Equipment—

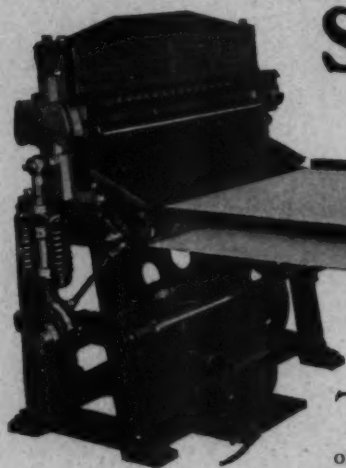
A large assortment of used candy and chocolate machinery always kept in stock.

CANDY AND CHOCOLATE SPECIAL MACHINE COMPANY

INC.

39 Cortlandt Street

New York City



SIMPLEX MOTOR DRIVEN PLASTIC PRESS

FOR FILLED OR STUFFED HARD CANDIES

THE SIMPLEX IMPROVED PLASTIC PRESS has a greater output capacity than the older type machines, 24 inch Die Bars; direct motor drive; two speeds, special wire screen conveyor. Operation economical, simple and exceptionally accurate—every machine given a practical test before shipment.

*An assortment of popular dies included with every press.
No extra charge.*

VACUUM CANDY MACHINERY CO.

326 W. Madison Street
CHICAGO

Our Motor
Driven Sizing
Machine
Insures
Greater
Production
and Accuracy

Bucyrus Copper Kettles

have given dependable service since 1874. Their design assures—

Safety—Durability—Economy



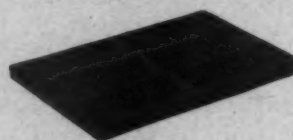
Steam Jacketed Tilting Kettle

Our Prices will interest you. Get them!

The Bucyrus Copper Kettle Works Co.
Bucyrus, Ohio

Also Manufacturers of
MIXING KETTLES, COPPER CANDY PANS
and BUCYRUS REVOLVING PANS—
the last word in production machines.

Chocolate Molds



BARS, CAKES, FANCY PIECES
Double Molds for Hollow Figures
PANS—LARGE and SMALL

EPPELSHEIMER & CO.

34 Hubert Street

NEW YORK CITY

WHEN YOU THINK OF
**CANDY MACHINERY and
FACTORY EQUIPMENT**

CONSULT THIS

**Machinery and Factory Equipment Insert
in The Candy Manufacturer**

If you don't find it here, write

The Candy Manufacturer Publishing Co.
30 North La Salle Street, Chicago

PUT YOUR EQUIPMENT ON YOUR PAYROLL

(Continued from Page 26)

ment of maintenance funds; so they used the trucks with great care. Yet if they failed to report the actual number of days on which the truck was working, in an attempt to save their funds, they had no "comeback" if the repair bill mounted up to unreasonable proportions. They just naturally had to tell the truth, a most distressing predicament in this day and age.

When the truck's bank balance equals its replacement value, no further per diem charge is made. Theoretically, the machine is worn out and scrapped. The mere fact that it is still giving excellent service is just so much good luck.

The state is considering extending this system to other machinery. It has worked well on motor vehicles, and there is no reason why it should not work equally well on graders, concrete mixers, rollers, scarifiers, and all kinds of equipment.

Contractors are looking into the matter with a view to adapting it to their needs. Each article of equipment which is used by a single gang would be charged to the foreman. He would carry it on his payroll along with the rest of the hunkies. Larger pieces of machinery, used by more than one crew, could be pro-rated among the foremen in the proportion of time it was used by each one, or it could be charged against the superintendent. He would not mind. He is so used to having everything piled on his shoulders that he probably would not notice his extra load.

Making Equipment Replace Itself

Pay each article of equipment that is large enough to come above the "Small Tool Account" on a salary basis. Then make it replace itself and pay its own repair bills. Base this salary on the old theory of what a man was worth in wages, just enough to support himself and allow him to reproduce another laborer to take his place when he was worn out.

This may sound like renting your own equipment to yourself. All right, call it that if you wish. But remember, there is no one else to whom extraordinary repairs can be charged in this instance. The renter pays all bills. On the other hand, don't try to make any money out of this account. It is merely a new way of organizing a revolving fund to care for the equipment.

Your only profit lies in the greater care taken of each machine when the man in charge knows that its earnings and expenses are being carefully checked. He knows that there is no convenient alibi handy; so he watches his derrick, his hoisting engine, his mixer and his trucks as closely as he has been accustomed to watching his men. The results of this constant oversight will show up on the profit side of the ledger. Try it out.

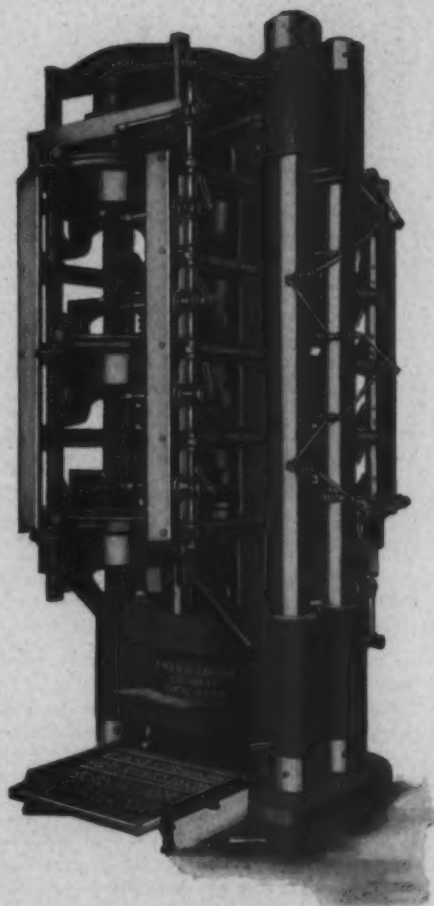
PRESSING COCOA BUTTER

IS A

PROFITABLE
OPERATION

WITH

CARVER PRESSES



Patented and Patents Pending

FOR
FURTHER INFORMATION
ADDRESS

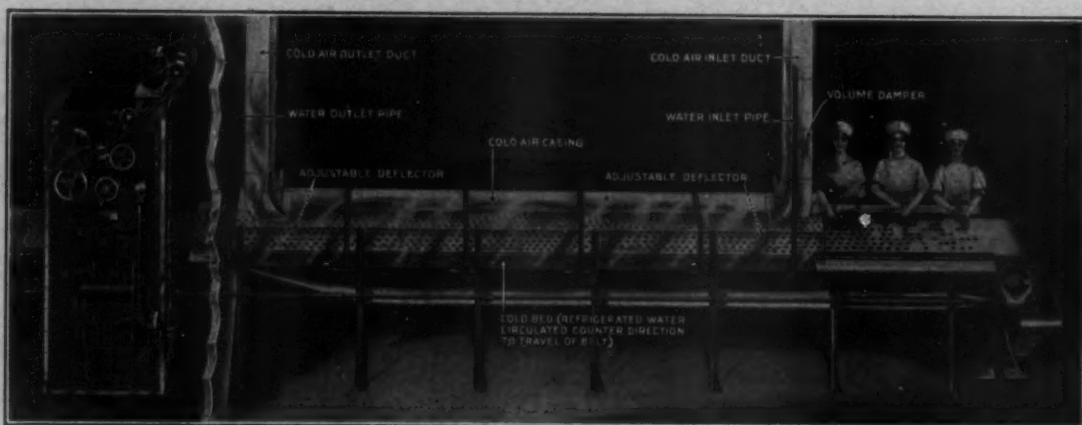
FRED S. CARVER
ENGINEER

8 West 40th Street

NEW YORK

The "Coldbed" Chocolate Drying and Packing Table

Directly Connected to Enrober



Patents Pending

Something You Should Know

The Largest, the Most Representative, the Best Known Candy Makers Have Exclusively Adopted the Coldbed and Will Use No Other Method for Chilling and Drying Chocolate Coated Goods. Why? What Is the Secret of Its Popularity? What Reason Can Be Given for the Unfailing Repeat Orders Which Follow a Trial Installation?

THE ANSWER IS OBVIOUS—The practical, experienced, production manager has learned the value of applied engineering knowledge. As an example, he now knows that for the same rise in temperature one gallon of refrigerated water will take up as much heat as two hundred cubic feet of refrigerated air.

He knows that in Chilling Chocolate goods smaller crystals of the fat are formed when the cooling is rapid, while in slow cooling larger crystals are formed and the fracture consequently becomes dull and grayish.

Having knowledge of such well known principles it was just plain common sense to apply them practically as we have done with the COLDBED Table, and as a result the chocolates by this method show a finer texture and the centers, being properly chilled throughout, are in the best possible condition for immediate packing. And (this is important to your pocketbook)—

1. The COLDBED Tables are sold at a very reasonable price. Our customers say we do not ask enough for them.
2. They are great money savers. No girl at the feed end of the table. The goods are not handled on the COLDBED until they reach the packer.
3. The scrap and waste is minimized. The goods are immediately set after leaving the enrober and hence there are no feather edges.

We will serve you wherever you are. Write for literature and complete information.

Also manufacturers of
"The Chillblast" Air Conditioner, Cooler and Dehumidifier,
The Bents Drying System for Starch Rooms
and

The Bents Air Conditioning Apparatus for Maintaining Uniform Atmospheric
Conditions in Rooms or Factories.

BENTZ ENGINEERING CORPORATION

Main Office: 140 Cedar St., New York

Factory: 661 Frelinghuysen Ave., Newark, N. J.

The Superintendents' Round-Table

AT THE close of the article on the handling of Cacao Products in our February issue, a request was made for a discussion on maintaining standard percentages of chocolate coating desired on a piece, together with system for checking overage. The following article on this subject has been submitted. It comes under the classification of "Profits Saved" and that is where the dividends of 1923, if there are any, will come from in the case of many manufacturers who have not heretofore given due consideration to scientific and systematic factory management.

Standardizing and Checking Percentages of Coating

by William S. Cloud

Superintendent, J. O. Roszell of Peoria

IT may be taken for granted that every foreman and superintendent is aware of the vital importance of knowing the percentages of coatings used. This importance is so generally known and emphasized that it seems strange no comprehensive plan or scheme for determining and controlling these percentages with a certainty has been advanced. No doubt, every man in charge of such work has some scheme of procedure by which he determines, to his own satisfaction at least, these figures, yet he hesitates to advance it because of the importance of the subject, and thinking, perhaps, that his scheme is amateurish compared to others. The writer confesses this hesitancy, but hopes by this presentation to provoke general discussion beneficial to all. The following scheme has worked very satisfactorily in a factory turning out very near a million pounds a year, about ninety per cent chocolate coated. Its limitations for the larger factories will be apparent.

There are just two steps to be taken; first, a standard has to be established, and second, it must be seen that the standard is lived up to.

Setting the Standard

When a new piece is conceived and the ingredients decided, the thought naturally turns to the coating. First, we must know the kind of coating to be used—dark or light, bitter, sweet, or milk, or some combination of these. One's taste is here the best judge, not only of the blend of the center with the coating, but the appearance as well, tempered, of course, by the prevailing trend in the localities catered to.

The quality having been determined, the quantity that will make the best eating piece is to be considered. Here again taste is the best judge, excepting that we must know, of course, that it is practicable to run under ordinary conditions the percentage decided upon. Often the quality and quantity have to be compromised to lower the cost, and then it is simply a matter of putting on the best quality and the most chocolate that the cost figures will per-

mit. Usually it seems better to sacrifice quantity rather than quality, but occasionally this is not practicable.

We now have a standard to go by; a standard approved by taste, appearance, practicability, and the cost figures. It simply remains to see to it that the following pieces shall conform to these standards. Variations in the cost of raw materials sometimes necessitate a change in the quality or quantity used, but such changes should be made only as a last resort on a piece that is giving results.

Maintaining the Standard

Of course the stock is immediately checked to see if there is sufficient chocolate of the kind decided upon to meet this new demand. The enrober or chocolate department foreman is told the kind of chocolate to be used on this piece. Instead of telling him the percentage of coating that should be used, which may or may not mean something to him, a table is given him and every new piece is added to it. Suppose, to be concrete, we are running a new five cent bar, the weight of the center is, say 1.4 ozs. and the proper amount of coating as decided above makes this bar weigh 1.8 ozs. These two figures are then added to the table with which the operator is provided. This is all that he wishes to know. He has a pair of scales which are placed just inside the cold room or in the most convenient place for his use. The table of weights is tacked directly over the scales or near to them. If the scales are graduated to sixteenths instead of tenths then the table is made to read in sixteenths. When the scales permit it, it is better to take about four or more pieces in order to get an average. The entries for this particular bar would then show on this card as follows:

*Piece Number	Number of Pieces Weighed	Before Coating	After Coating
27	4	5.6	7.2

*All pieces are designated by numbers rather than names, throughout the factory.

When a batch is sent from the cream or other department to the chocolate department the foreman checks the uncoated weight; if much off he reports the difference before running. If O. K. he runs them and sees that the piece after being coated checks with the table. From his experience he is then able to judge the coating by watching the same, checking occasionally when time permits.

With an experienced, conscientious operator who is not rushed at any time, nothing further might be necessary. The coating would probably conform to the table and therefore to the standard which in this case happens to be 22.2%. Many operators are really experienced, most are conscientious, but all are rushed at one time or another. These rush moments may slip by with a heavier coating on the goods. At any rate discrepancies seem bound to occur and must be known immediately in order to check their increase and prevent a dangerous leak in profits.

We know that every bar of this kind should have .4 ozs. of a certain kind of chocolate on it and therefore a box of 24's should carry with it .6 of a pound. A table is made of the standard weight of chocolate per box and each day the number of boxes of goods turned out is multiplied by the number representing the standard coating for that kind of bar. The figures for the different kinds of coatings may be added separately or be combined. The chocolate man submits a report of the estimated amount of chocolate on hand each evening. His report is checked with the stock clerk's and, of course, the latter's is checked monthly, so that although the chocolate man's report for any one day may be off still it is bound to work out exactly on the average.

Now the figures as deduced from the standards and as taken from the report of the chocolate department may not agree closely for any one day because some goods may be left on the floor unfinished, or the report of the chocolate department may be off. But the one who is keeping these figures is acquainted with these variables and taking them into account can tell if anything is wrong. At the end of a week the figures should check within one per cent. If they do check we know that we are right, for we can account for every pound of chocolate from the time it enters the factory till it leaves. If it doesn't check the following may be done:

Check the arithmetic involved.

Make more frequent tests to see that the percentages are agreeing with the table.

Compare cream or other department's production report with the weight of the finished product.

If the error is a large one it will be detected the first or second day and can be remedied immediately. If it is a very small one it won't be noticed until the weekly summary is made.

Sometimes it is helpful to check each kind of coating by itself to discover an overrun.

Proving the Practicability of the System

With everybody on the job no trouble is encountered. It doesn't take the operator more than a minute to make a test; the chocolate man can estimate the amount of chocolate on hand and record the same in less than five minutes, and a girl can figure the amount of chocolate from the standards in five minutes and the work is complete. A new operator will have trouble in holding the coating to the required percentages. He may at times get a correct coating and think or say that all of them are O. K., but the daily and weekly reports will show exactly the gain or loss. One "experienced" operator we tried reported that everything was going nicely in spite of the fact that the daily and weekly reports showed that there was a weekly overrun of over \$200 worth of chocolate.

Below are given the figures for one week's run, the kinds of coating being simply milk and sweet. If discrepancies occur, a more detailed classification is resorted to:

<i>From Chocolate Report</i>		<i>From Standard Report</i>	
Milk	Sweet	Milk	Sweet
1,493	795	961	817
1,079	455	1,142	467
1,139	1,015	1,170	825
1,118	860	1,124	843
1,079	890	1,523	923
249	1,112	255	1,129
<hr/>		<hr/>	
6,157	5,127	6,175	5,004
Total, 11,284 pounds		Total, 11,179 pounds	
Deviation from standard is + 105 lbs. or + .0094 in percentage.			

It is preferable, of course, to have the standard figures run under the actual used, for the company then is gaining rather than losing this fraction, as the costs are figured from the standards. In the long run they should be made to balance.

In conclusion, a few advantages of this system might be pointed out. In the first place, it takes practically no time of production men. In other words, it never interferes with production. One does not have to wait for the goods to be weighed, etc. In the second place, it is absolutely accurate for the chocolate is checked from the time it enters the building till it leaves. If the chocolate man makes a mistake it can be checked with the stock clerk's report, etc. Thirdly, the system is so simple after once being established that there is scarcely any evidence of the fact that the coating is being checked at all. Taken all together it complies with all the rigid rules of accounting and yet involves no red tape or loss of labor efficiency.

A mule makes very little progress while he is kicking.

Edible Gelatin in the Candy Industry

By Thomas B. Downey, Ph. D.

Industrial Fellow, Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, Pa.; Research chemist for the Edible Gelatine Manufacturers of America, Inc., an organization composed of the following companies: Crystal Gelatine Co., Boston, Mass.; Essex Gelatine Co., Boston, Mass.; Kind & Landesmann, Inc., Camden, N. J.; Milligan & Higgins Gelatine Co., New York, N. Y.; Swift & Co., Chicago, Ill.; United States Chemical and Organic Products Co., Chicago, Ill.; and United States Gelatine Co., Milwaukee, Wis.

THE confectionery industry is indeed fortunate in having at its disposal a substance which possesses such unique properties as edible gelatin. This food product occupies a distinctive position among the materials used in candy making, in that it possesses dietetic value and offers possibilities of applicability that are unequaled by the various gums which have been proposed as substitutes.

The essential characteristics of edible gelatin which have proved to be advantageous to the confectionery industry are as follows: its ability to function as a protective colloid and emulstatic agent (these uses are defined later in this paper); its capacity to set to a firm, clear, bright jelly, and its power to render other foods easier of digestion. In addition to the possession of these important properties, edible gelatin has a high nutritive value by itself and is one of the most readily digestible proteins, as has been shown by numerous investigations.

The name gelatin, or gelatine, through constant usage over a period of many years, has been extended to include a number of substances which have the property of gelatinizing, forming jellies or congealing. To avoid a confusion of terms in the trade, it has been found advisable to give a distinctive name to those animal gelatins that are carefully prepared from clean, fresh stock and intended for use in food products. Consequently, the term "edible gelatin" has been chosen to designate an animal gelatin suitable for food purposes.

The edible gelatin placed on American markets must conform to certain government standards or specifications, as tentatively fixed by the U. S. Department of Agriculture (Bureau of Chemistry and Animal Husbandry). The enforcement of these standards of purity was perhaps, the greatest service that has ever been performed for the edible gelatin industry. Many undesirable manufacturers, both domestic and foreign, were automatically expelled from the market and the users of their vitiating products were either forced out of business or compelled to use true edible gelatin. The present high standards upheld by reputable manufacturers in this country constitute a monument to American business integrity, as they are turning out a product in many cases far superior to that required by law. Hence, the prime prerequisite

from ethical as well as sales requirements, is met; that is, the edible gelatin used in confections is a product whose purity is set by government specifications and whose standards are upheld by reputable manufacturers.

Edible Gelatin as a Protective Colloid

The need of a protective colloid is paramount in those confections which have an undue tendency to grain. The graining is, of course, due to the sugar returning to its stable crystalline form. In many formulas, the composition is such that a protector is a necessity, while in others it is a safeguard.

The beneficial use of gelatin as a protective colloid in many classes of confections is generally recognized. The following may be taken as typical examples: creams, fine cream pastes, certain bon-bon creams, kisses, and taffies. In certain bon-bon creams, as pointed out by Friedman, a greater elasticity results from the use of gelatin.

With fine cream pastes, many manufacturers claim that a better gloss on the product is secured. Kisses, taffies and other similar goods stand up much better where gelatin is added in relatively small amounts to the batch.

It will be profitable to consider the technical aspects of gelatin as a protective colloid. Gelatin is a colloid, that is, a substance whose particles in solution are not so finely divided as crystalloids, such as sugar. Colloids are precipitated from their solutions by the addition of salts or acids; for example, the casein present in milk is precipitated in flocculent masses by the addition of an acid. It is a remarkable fact that there are colloids which will prevent this coagulation where present in relatively small amounts. Gelatin is such a protective or stabilizing agent and one whose efficiency excels that of all others. Measurements of this protective action have been made with colloidal solutions. They show that 1 part of gelatin exerts the same protective action as approximately 6 parts of amorphous egg albumin, 16 parts of fresh egg white, 50 parts of gum arabic, or 400 parts of gum tragacanth.

The protective action of gelatin is also exerted upon crystalloids, as is shown by the fact that gelatin prevents the growth of water and sugar crystals in ice cream. Ice cream that does not contain such a stabilizer will become coarse and granular in a very short time. How-

ever, where gelatin is present in very small amounts (approximately $\frac{1}{2}$ of 1 per cent), the ice cream is stabilized and can be held for some time without structural deterioration.

The above example is analogous to the action that gelatin exerts in retarding the crystallization of sugar in many candies.

The use of edible gelatin in the following recipes has assured a more stable product as well as other desirable properties:

No. 6 and No. 16 hard rolled creams, No. 9 cream for hand-rolled chocolates, four star cream, bitter sweet cream, good cream for starch goods, bon-bon cream No. 2, A No. 1, molasses kisses, yankee nutmeg taffy, none better molasses taffy, and gelatin icing¹; and also Boston chewing taffy, butter cup chews and Italian chocolate creams.²

1. Friedman, "Common-Sense Candy Teacher."

2. Rigley, "Reliable Candy Teacher."

Edible Gelatin as an Emulsifying Agent

In the preparation of emulsions for example, oil and water—three substances are essential for the formation of a stable product, namely, oil, water and an emulsifying agent. Oil and water may be shaken together to form an emulsion of temporary duration. The third substance is necessary—namely, the emulsifying agent, which forms a film about the finely divided droplets of the one liquid (internal phase) dispersed throughout the other—before a stable emulsion can be obtained. The use of edible gelatin as an emulsifying agent in food products is a very important one, because of its great efficiency in this capacity, its purity and its food value.

The principal use of edible gelatin as an emulsifying agent in the candy industry, is in the manufacture of marshmallows and other confectionery foams.

A smaller amount of a high jelly-power gelatin than of a lower jelly-power gelatin is required to make a marshmallow of a desired consistency. However, it is well to bear in mind that relatively small increases in the concentration of the gelatin in its solutions materially increases the jelly power of the solutions.

Another application of gelatin is found in the stabilizing of emulsion flavors. For the preparation of unbaked meringues, the baking trade has learned that excellent results are obtained by combinations of gelatin and egg-albumin. Thin cream is easily whipped when small amounts of gelatin are added.

Edible Gelatin as a Gelatinizing Agent

The ability of gelatin to form jellies has been of interest to scientists and laymen for many years. In fact, the strength of consistency of the jelly is the major criterion for grading edible gelatin. The clear brilliance of gelatin jellies lends itself to the fabrication of many enticing confections. These preparations are so familiar that the names of only a few are given in passing, where gelatin is used either as a firm jelly or in smaller amounts to give

body to confections which would not otherwise hold their shape.

The following products are illustrative: Fruit jelly chocolates, plum chocolates, apricot centers, pineapple jelly chocolates, gum drops,¹ cocoanut nougat, frozen cream chocolates, rose jelly gum drops, and scraps.²

1. Rigby, "Reliable Candy Teacher."

2. Friedman, "Common-Sense Candy Teacher."

Gum drops are widely made from gelatin where the product has a quick turnover. As an agent for increasing the body of nougats and preventing their running, certain manufacturers find it very satisfactory; while as an ingredient for scrap formulas, its application is extensive. Fig bars from scrap are an economical and easily sold confection.

Value of Edible Gelatin in the Dietary

Edible gelatin performs valuable functions in the dietary for several reasons: first, it is an exceedingly efficient protective and emulsifying agent; second, it is a very easy protein to digest and has considerable food value; and third, in suitable food combinations, it increases nutritive value.

The protective action and emulsification effects secured by the use of gelatin in the dietary are best shown by a consideration of the digestion of cow's milk. When cow's milk, which contains a relatively small amount of the protective colloid lactalbumin, is taken into the stomach with its acid secretions, the casein is coagulated into rather large, greasy curds. These curds are tough and tenacious and difficult to redissolve by the digestive juices, which must occur before the organism can assimilate the food. In the presence of gelatin the curd formation is either prevented or greatly modified, and loose, easily dissolved flocks may be formed. When the food is passed into the intestinal tract, with its alkaline secretions, gelatin continues to function as an emulsifying agent, and, by maintaining the fats in the finely divided emulsoid state, materially aids their assimilation.

Thus it is seen that gelatin possesses the singular property of exerting its beneficial effects in the stomach (with its acid secretions) and in the intestines (with their alkaline secretions). The use of a protective agent for bottle babies fed on cow's milk is a necessity and many authorities assert that normal adults require this aid to easy digestion.

The writer has investigated the action of edible gelatin as a supplementary agent to many foodstuffs common in the American dietary and has found in many cases that it greatly increases the nutritive value of these foods. As this investigation is not complete, a detailed description cannot be given at this time.

Prof. E. V. McCollum, of Johns Hopkins University, Baltimore, Md., has shown that the proteins of wheat and rolled oats are better foods for the growth of experimental animals when gelatin is included therewith. However,

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Confectioners' Thermometers

Why, When and How to Use Them

by Stroud Jordan, Ph. D.

Dr. Jordan is associated with one of the foremost candy manufacturers in America. This is the fifth of a series of articles on practical subjects of interest to the production department.

THE word thermometer means heat measurer, however, this does not describe what it is but what it does. The type of thermometer to which we are most accustomed is the glass tube filled with mercury and graduated in equal divisions between certain well defined points. This tube may be filled with any other liquid which will expand and contract uniformly with the rise and fall of temperature and so we often-times have the thermometer tube filled with colored alcohol. For higher temperatures we use the pyrometer which as its name implies measures fire by measuring the amount of current set up by a couple when in contact with a high heat in terms of the heat itself. The pyrometer has little application in confectionery manufacture outside of the boiler room and as such is of passing interest at present.

Perhaps the two best known thermometers are the fahrenheit and centigrade. On the centigrade scale water freezes at zero and boils at 100 degrees which accounts for the name whose definition is one hundred graduations. On the fahrenheit scale water freezes at 32 and boils at 212 degrees which makes a division of 180 degrees between freezing and boiling of water. Other points are determined by boiling, freezing or melting points of well known substances and laid off on the scale in equal divisions but always with reference to the freezing and boiling points of water. In other words, the boiling and freezing points of water are the yard-stick by which all ordinary temperatures are measured. If it becomes necessary to convert the reading from one scale into corresponding degrees on the other scale a simple rule may be followed: "To convert centigrade to fahrenheit, multiply by 1.8 and add 32; to convert

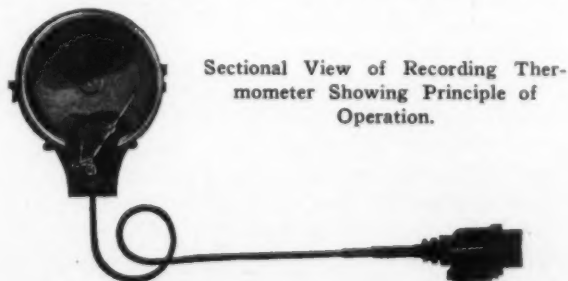
fahrenheit reverse the process or subtract 32 and divide by 1.8." This rule is derived from the fact that the centigrade has zero for water freezing and 100 for boiling while fahrenheit has 32 for water freezing and 212 for boiling.

To check up your thermometers take any convenient vessel away from air currents and suspend a thermometer in the steam over boiling water but not in the water itself. The top of such vessel should be of such shape that it could be closed loosely to prevent the room temperature from effecting the steam. Boil the water briskly and note the reading on your thermometers which should be 100 on the centigrade and 212 on the fahrenheit scales, provided the elevation is at sea level. If the elevation is not too high the correction may be neglected for the error is the same for every heat measurement in this particular elevation and all future readings will be comparable, however, if you may have to check readings from elevations which differ you will have to allow for this correction which will be determined once for all and will apply to all readings made at these definite elevations.

Haven't you often heard it said that you cannot cook peas on a high mountain or boil potatoes at such elevations? This is true if the elevation is high enough for the actual energy added to water to make it boil is enough to push back the pressure of the atmosphere before it begins to boil and it is further true that the higher you go up the less the barometric pressure and consequently a less heat is used to make water boil. If water is placed under vacuum, or in a container which is later vacuumized, it will boil at ordinary room temperature. All who are familiar with vacuum operations in sugar cooking know that the temperature on the vacuum kettle is much lower than on an open kettle doing the same work.

Thermometer Types

The general type of thermometer is either graduated on the stem of the thermometer itself or the thermometer is attached to a scale which is graduated and is fastened so this scale is not easily moved. For absolute accuracy the graduation on the stem itself is to be preferred. There are other types of thermometers



Sectional View of Recording Thermometer Showing Principle of Operation.



in which the mercury or other liquid acts on a coil spring, causing it to expand and this in turn operates a pointer similar to a steam gauge. For the use of unskilled labor it is oftentimes necessary to use this type for every one is more or less familiar with a steam gauge and can read it but will balk at reading a graduated column on a glass thermometer.

From the dial thermometer it is only a step to the recording thermometer, which is the nearest to perfection of any obtainable for the batch operator. In this type of thermometer a clock work is enclosed in a suitable case and where the hands of the clock are attached a broad shoulder is left with a removable nut which fits on this shoulder. When the nut is removed a circular paper chart with a hole in the center is fitted over the shoulder and the nut tightened so that the chart is rigid and moves with the shoulder in a direction opposite to the ordinary hands of a clock. This chart is divided into an equal number of divisions around the circle, starting at the center and extending to the edge and if we are using a twenty-four hour chart it will be divided into twenty-four divisions, which in turn may be divided into quarter hour or minute divisions. Temperature circles are started at the center and get larger as they go towards the edge of the chart but always have the same space between the degree lines so that we have time and temperature registered at the same interval on such charts.

The recording device is a fixed arm which is attached to a coil spring of the type used in the dial thermometer, instead of the pointer device and this can be operated by any liquid which expands uniformly. A flexible or rigid tube may contain the actuating medium and the result will be the same for as the medium expands the arm is pushed out towards the edge of the chart proportional to the heat applied and in the end of this arm a pen is attached and kept full of ink. As the arm travels out the pen is in contact with the chart and leaves a line which is your record of heat and time.

Now if we start the clock work and insert the bulb into a material which is to be cooked the temperature will be recorded for every second of the operation and the word of the operative will not be necessary. In short, the recorder is factory shorthand and the foreman or superintendent may at any time look over daily charts and see not only cooking temperature but actual production on any kettle or dry room.

If a very close check is to be had on operations an alarm device may be attached and the recorder set so that it will signal whenever the danger line is reached and as the batch cools off we may attach a like signal which will automatically signal when the material is cool enough to pack or use. In the event of a close watch on the cooking there is a punch which may be attached to this recorder to be punched by the operative whenever he reads his chart and this punch is actually recorded on each chart as a part, showing time as well as temperature when the thermometer was read. With such improvements the recording thermometer has become almost fool proof and will stand very hard and strenuous duty.

The greatest objection to the recording thermometer is the initial expense and the fact that a pipe wrench, hammer and jack cannot be used on it for repairs. If reasonable care is taken with such instruments they will pay for themselves many times over and the satisfaction of having an undisputable record of every operation for all time instead of some operative's word or memory and the fact that the recorder works all the while on your drying rooms, even while the plant is closed, makes it almost a necessity in all well regulated processes.

Why Use a Thermometer

It is customary to cook in many operations by feel or consistency and it is really surprising how close an old operative will come by this method but every time such procedure is followed try and calculate the batches he must have ruined getting this practice. Even the most trusted and experienced slip up sometimes and perhaps they may be called away at a critical time and not be on hand to shut the steam when it should go off. It is too late to lock the stable after the horse is gone and the batch once ruined can't be reclaimed.

In studying the reasons for using a thermometer it is only necessary to state that each solution of sugar and water has a definite boiling point and that this point actually represents so much sugar and so much water without the slightest chance of guess work. Sugar and water will boil higher than water alone and the boiling point will actually be determined by the ratio of sugar to water. As the sugar percentage increases the temperature rises until all water is boiled out, so in the operation of sugar melting and later boiling to special moisture content one has only to watch the thermometer and read it correctly to insure uniform produc-

tion at all times. There is no guess work with a thermometer if it is read and used correctly.

If you are coating goods with cream, chocolate or for that matter any coating mixture, there is a temperature at which it sticks best, dips smoothest and stands up as it should. The test of feeling on the elbow or face may give an indication but to judge in this manner is not accurate and the feel of two operatives will differ. If they are not blind they can always read a thermometer and will be working on a comparable basis if the temperatures are the same in each case. And so there is what we may call a specific temperature at which all operations should be carried out, whether it is drying out, warming up or cooling and to exceed this mark will cause bad results. We said that the freezing point of water and its boiling point were the yard-stick of temperature and so the finished thermometer is the yard-stick of efficient confectionery manufacture. It makes of all operatives brothers when applied properly, and removes the element of chance from operations where heat is required.

To clearly demonstrate the actual need of more uniform temperature control lets assume that we have boiled two separate batches of cream and finished them five degrees apart. Lets further assume that the one boiled highest had the proper moisture content when it becomes apparent that the lower boiled cream finished with excessive water. Now lets follow these creams up and see what happens. They are handled in the same manner, side by side, packed in similar containers and stored in the same room. The temperature may rise during storage and the one carrying excessive moisture will tend to lose it but it cannot escape and condenses on the cooler interior creams which causes them to sweat. The outside of these creams become wet, stick together and furnish ideal grounds for fermentation and bacteria action. The consequences are that you have an article unfit for the trade and if it has reached the trade you get a return and perhaps lose a customer, while the article carrying the proper moisture will not sweat so easily and will most likely carry through. Such a difference is a reality where exact temperature control is not exercised and this example may be paralleled with any number of others of a similar nature. There are points where caramels set and hold their shape and where jellies set firm, which is true in many other classes of goods as well.

Thermometer Dos and Don'ts

In every operation where heat or cold is employed it is a necessity that accurate control be kept if we would have uniform and satisfactory goods for you can't look at a batch of material and guess whether it is right or not

with any degree of safety. Neither can you use a thermometer incorrectly and get results and if you take your thermometer out of a hot batch and walk over to the window with it to read the temperature you had better guess in the first place and save thermometer expense. Neither can you dip up a scoop full of material and place the thermometer in it and go to the light and read with accuracy for temperature is a thing which is influenced very easily and the heat of the room is never as high as the batch or you wouldn't have any operatives left. The divisions on the thermometer scale or chart are made to reach and not exceed and it is well to remember that one degree will make quite a difference in actual moisture content.

The greatest care must be taken to get actual results with your thermometer and the place it is inserted in the batch has all to do with accuracy. Perhaps you use an open kettle with a steam jacket or steam coil or both and place a thermometer in the batch and clamp it to the kettle side. Maybe the bulb rests on the steam coil or the jacket and if it does you will register too much and an untrue heat. Again we may assume that we are using a mixer and to get a place away from the mixing arms we will insert the thermometer at the top of the batch where it is not always covered by the material. If you do your temperature will be lower than is true and your results will show too much moisture cooked out.

This same condition will apply to the drying rooms and if you take the temperature at the top of a stack of trays or at the bottom of the room you will find a wide divergence. It is granted that such should not be the case and will not be in the perfect drying room but the perfect drying room will happen only in Utopia and this is too far off to be counted on. The ideal arrangement for your drying room thermometer is the elongated bulb where the mercury is spread out in a thin wire like bulb over the whole top of the room and a similar arrangement is had with your bottom bulb for in this manner you get a true average of the temperature and are sure that the reading is not taken from any one space or some air pocket.

Wherever it is possible a light should be hung as close to the thermometer as possible and in such a manner that the reading will be easy. Even in a recording thermometer this is necessary if we are to heat by it with any degree of accuracy. To sum up on the thermometer use, it is well to say that it must be placed in such a position that it may be read easily, conveniently and frequently and further so that it registers the temperature of the batch and not that of the jacket, coil or room. The scale

Continued on page 48.

What's New and What's Doing

W. Windsor, of Lindsay, Washington, has sold his patent controlling the process devised by him for glazing olives, to a company which will place the confection on the market. Before Windsor perfected his process, it had been thought impossible to create a sugared olive confection because of the difficulty of mixing the oil and sugar.

By the Windsor process the bitter taste of the olives is removed and the oil cells are disintegrated, allowing the fruit to be glazed.

The main part of candy department in the L. S. Donaldson Company, Minneapolis, has been taken over by the Mari-Bell Sweet line, and Mari-Bell Sweets have also opened a candy department in Swanson's Floral Store at 912 Nicollet avenue, these being in addition to their present location in the Andrews Hotel. A. D. Campbell is the proprietor.

Littlefield & Steere Company have under construction an addition to their plant, located at 909-913 W. Clinch avenue. The addition will be seven stories high, with an additional story added to the present six-story building. The addition will give them an additional floor space of about 40,000 square feet, giving a total floor space of about 100,000 square feet. This addition was made necessary by increased business and needed additional factory space for the manufacture of their products, which are known to the trade as Red Seal Brand Confections.

Willard's Chocolates, Limited, Toronto, have purchased the plant erected by the Ontario Milk Products Co. The company failed, and the plant has stood idle since 1921. Willards will manufacture milk and cream powder not only for their own use, but for general sale as well.

The Grace Darling Candy Shops, Inc., recently have disposed of their entire chain of stores to the Fanny Farmer Candy Shops, Inc., of New York.

The management has taken possession and is making rapid progress in converting the chain of shops taken over in this part of the country into Fanny Farmer shops.

C. P. Moher, director of the company, formerly of Rochester, will be resident manager of the Minneapolis branch. Mr. Moher has just completed a visit to the shops in Milwaukee, Duluth, Sioux City, Superior and Des Moines as well as those in Minneapolis and St. Paul, and plans to take up several other locations in Minneapolis soon.

Fanny Farmer shops are associated with the Laura Secord Candy shops in Canada. The first shop to be converted into a Fanny Farmer candy shop is the one at 615 Hennepin avenue.

The Logan Candy Company, Houston, Texas, recently incorporated for thirty thousand dollars. The organization is expanding for the purpose of enlarging its scope of business in the manufacture of a complete line of high grade staple candies. They have developed their own organization to call direct on the retail merchants in the territory.

The Harry R. King Company, Louisville, Ky., has recently entered into the business of manufacturing candy.

George C. Miller & Company have recently been incorporated for \$50,000 in Boston, Mass. The factory was formerly occupied by the Fidelity Chocolate Co.

The Michigan Securities Commission has approved and authorized the issue of \$100,000 preferred stock for W. E. Taylor, maker Taylor-Made Candy, Battle Creek, Mich. The proceeds from preferred stock sale Mr. Taylor will use in a building program and the installation of some special built machinery to more than double the present output of their specialty the "genuine" Taylor-Made Honey Comb Chocolate Chips.

Milk Condensory Making Confectionery

One thousand hands will be employed at the new candy factory of Nestle's Anglo-Swiss Condensed Milk Company at Five Dock, Sydney, New South Wales, according to a statement just received by the Department of Commerce from Consul Wormuth, Sydney. Chocolates and all kinds of confectionery will be manufactured. It has so neared completion at the present time that it already employs 600 people.

Charles A. Straw, formerly of Chicago, is opening a factory in Elkhart, Indiana.

An optimist is a pessimist who, in the evening, can make lemonade of the lemons handed him during the day.

"If a man does not have belief and enthusiasm, the chances are small indeed that he will ever do a man's work in the world."—Theodore Roosevelt.

The Butler Candy Company of Waukegan, Ill., has under construction a large, new factory.

True glory takes root, and even spreads; all false pretenses, like flowers, fall to the ground; nor can any counterfeit last long.—Cicero.

Charles H. Ellston has been appointed director and secretary of Lara Secord Confectioners, Limited.

The Selected Qualities Candy Corporation is a new candy factory in Wichita, Kan. The factory is specializing in making bars.

The plant of the Atlas Candy Company, Lynchburg, Va., burned December 22nd. The loss is estimated at \$50,000.

To admit, a mistake is a sign of greatness, but to make the same mistake over is a sign of carelessness.

It's the little things that separate us from success—not the big ones.

EDIBLE GELATINE

Continued from page 42.

the value of corn proteins is not increased.

The use of edible gelatin in the dietary of fever, tuberculosis and diabetic patients well recognized. Its food value and protective effects are taken advantage of in the preparation of desserts for children and adults.

The food value of ice cream is increased by the addition of gelatin. An investigation carried out by the writer in feeding experiments with animals has shown that milk is improved in biological value by the addition of 1 per cent of edible gelatin.

Dr. C. A. Herter successfully used gelatin in chronic cases of infantilism. As he has pointed out, certain types of bacteria do not thrive in a gelatin medium. Its use in cases of chronic intestinal infection with food decomposition has met with medical endorsement.

These notes on the applications of edible gelatin should bring home to the manufacturing confectioner that he is using in making candies a technically valuable substance which also possesses many highly desirable properties from the viewpoint of the food chemist and dietitian.

"THE FOREMAN AND HIS JOB"

By Chas. R. Allen

This is a book that has just come to the attention of our Book Department and we find that it has some very interesting information on the analysis and problems of a foreman's job.

The book is divided into ten parts, each dealing with a special phase of this work. The headings of some of the chapters are "The Foreman and the Plant," "The Departmental and Workjob Analysis," "Putting Over the Supervisory Job," and "The Analysis of the Distribution of the Working Force," going into their specific and detailed responsibilities, the human factors, etc.

In the back of the book is a classified layout of some possible supervisory responsibilities in a foreman's job, taking up the divisions of Departmental Stock, Stock in Process, Finished Stock, Equipment in Service, Operation Control, New Operations in Process, Keeping up a Working Force, Distribution of the Working Force, Recording Giving Information, etc.

This book is published by the J. B. Lippincott Company but can be secured through the Book Department of *The Candy Manufacturer*.

Yes, But They're So Scarce

Lessing says: "The most agreeable of all companions is a simple, frank man, without any high pretensions to an aggressive greatness; one who loves life and understands the use of it; obliging alike at all hours; above all, of a golden temper, and steadfast as an anchor. For such a one we gladly exchange the greatest genius, the most brilliant wit, the profoundest thinker."

PETER'S New Coatings

We have perfected during 1922 and added to our line of chocolate Coatings and Liquors several splendid Vanilla coatings. Also two full cream Milks of the Peter type and three distinctive chocolate Liquors.

You will certainly be well repaid by an investigation of these new pieces which are as follows:

VANILLA SWEET CHOCOLATE COATINGS

(Graded from No. 1, very low in price, to No. 8, the most superb Vanilla in America)

Samson (1)	Excelsis (5)
La Scala (2)	Marabello (6)
Cosmopolitan (3)	Super X (7)
Paramount (4)	Super XX (8)

FULL CREAM MILK CHOCOLATE COATINGS

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PLAIN CHOCOLATE LIQUORS

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Swiss Chocolates Co.**

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Factories:

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AIR TIGHT
JELLY TUMBLERS

220,000,000 Upressit Openers

Every thumb is an opener for any Upressit sealed container.
Women keep Upressit sealed containers for future use because it's as easy to RE-SEAL as to open Upressit.
That's why Upressit SELLS candy for hundreds of manufacturers.
Send today for sample container fitted with the popular Upressit cap and shipping band.

Upressit Products Corporation
Long Island City, N. Y.

CONFECTIONERS' THERMOMETERS.

(Continued from Page 45)

should be easily read and the divisions as far apart as can be had, for the greater the space between degrees the greater the accuracy in readings made and one degree sometimes spells success or failure.

Imported Nut Situation

The shelled nut demand has been quiet for the past fortnight, very little moving in a large way. The general market is weak, with the exception of a few instances—namely, shelled filberts, which are making higher ground on account of shortage in supply. Levante filberts being scarce and of poor quality, the Barcelona goods are active and the marked advanced 3c per pound during the last month.

Extra large, bold, Marcona almonds, running 18/20 to the ounce are also difficult to obtain. The market has consequently advanced. Large, fancy almonds in the specialty class are also pretty well cleaned up abroad, and it is difficult to obtain round lots.

It is noticeable that 3 crown Valencias, which have a very active sale throughout the year, are not moving as actively as would be expected, the bulk of the 3 crown goods at present being taken up by the wholesale grocers.

Four crown Valencia almonds, Bevan & Company pack, are practically unobtainable. There are a few of the larger-sized Valencias on spot and afloat.

The general tone of the market is listless, but a slight buoyant undercurrent is detected in certain quarters which may bring about a better demand during the next two months.

Conley Foil Foils Spoilage and Waste

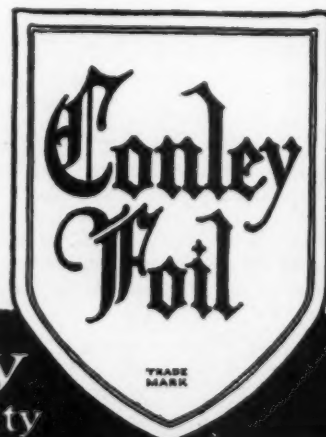
The cash returns will be greater for your dealers, your jobbers and yourself, when—

bright, clean Conley Foil wrappers enclose your various bars, keeping them fresh, and thus cutting down waste through spoilage and staleness, particularly during the coming warm weather.

We'll be glad to design a wrapper for you that will insure fewer returned goods, and greater returns in more sales, through its attractiveness and pulling power. No obligation.

Will you send us your suggestions today, and let us show you what we can do?

The Conley Foil Company
541 West 25th Street ~ New York City





CANDY BOX MATS, LACES,
LAYER CARDS, DIVIDERS, ETC.

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America's Standard
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Once tried
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LARGEST PRODUCERS OF CANDY CUPS IN AMERICA

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BRANCH OFFICES IN
PRINCIPAL CITIES

YOU MUST SELL YOURSELF

BY BERTON BRALEY

Life is a "selling problem," that is all;
And every man is his own line of goods;
And what the price is, big or very small,
Is simply up to him. For though the woods
Are full of buyers for his sort of stock,
He's got to learn the way to sell himself,
Or he'll discover, with a cruel shock,
That he's a marked down remnant on the shelf.

So to begin with he must try to be
An article of value, sound and fair;
For if he isn't—take this straight from me—
He'll find the market sluggish everywhere.
But, having worth, he must let buyers know
He's on the market to supply their need;
He's got to learn to make his value show
So plainly that whoever runs may read.

That doesn't mean that he must boast and shout
His own high quality; but it does mean
That he must make it clear, beyond a doubt,
By pep and push, that he is on the scene.
He mustn't miss a chance to prove his worth
And make his merit patent to men's eyes:
The chaps who get the highest price on earth
Are those who have the goods—and Advertise.

So watch your opportunities, and dwell
Upon the job your whole existence through;
Yourself is all the goods you have to sell
And what you get is wholly up to you!

—Adv. and Selling.

Knickerbocker "Made-Right" Sample Cases Bring Bigger, Better, More Orders

Displaying Samples Quickly, Attractively
Convincingly, Fresh and Clean



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Wood Trays, \$5.00

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Chocolate Coatings and Cocoas

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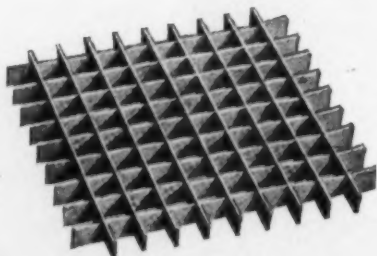
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Our **Partitions**, plain or fancy trimmed, and **Chocolate Dividers** are **Candy Insurance** of the best kind.

We have an up-to-date plant and deliveries are prompt.

Get our prices before you place your next order.

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Manufacturers of Paper and Cardboard Specialties

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Do your products comply with the changed specifications?

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*Most reliable gelatine
or Confectioners—*

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— Established 1879 —

Strength, purity and uniformity guaranteed

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Winchester, Mass.

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Highest Grade Shelled Nuts

1885—IMPORTERS—1923

SPENCER IMPORTING CO.

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GUM TRAGACANTH VANILLA BEANS GUM ARABIC

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DUCHÉ'S EDIBLE GELATINE

Manufactured Especially for Marshmallow Work.

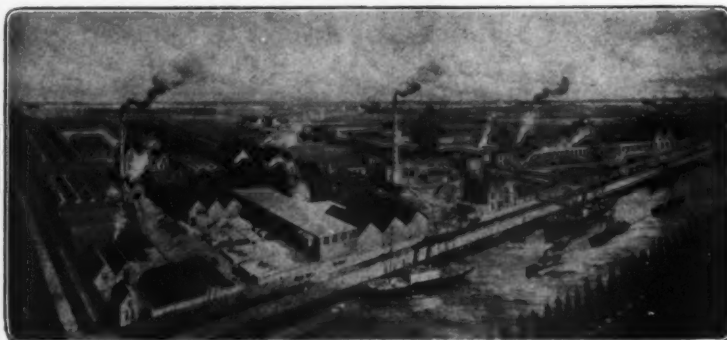
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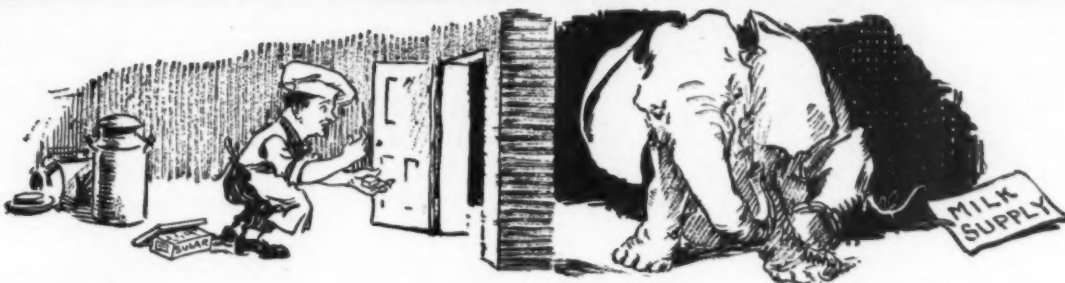
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THIS is what one prominent manufacturer called his milk supply—before he started using Merrell-Soule Powdered Milk.

Now he has eliminated the waste due to milk souring. He has done away with extra handling costs, uncertain deliveries and the danger of a poor product from a varying standard of milk. Incidentally, he saves on refrigeration as no ice is needed to keep Merrell-Soule Powdered Milk.

If you would assure the success of your candy, it will pay you to use an absolutely uniform grade of milk. Besides the blanket guarantee of purity, all Merrell-Soule Powdered Milk bears a specific guarantee of uniformity of grade—and you can get any grade you require, whether it be powdered skimmed milk, powdered *whole* milk or powdered cream of up to a 72% butter fat content.

We maintain a Technical Confectioners' Service Department to assist in all practical matters. Drop us a line if we can help you.

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SYRACUSE, N. Y.

Write for 54 page book giving quality and "price" recipes, Federal standards and other data of value to candy manufacturers.

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CXC CITRUS FLAVORS

The original terpenaceous concentrates.
Highest quality
for cream centers
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TFC TRUE FRUIT CONCENTRATES

Natural fruit flavors
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FINE VANILLAS for every purpose

The selection of the right flavor for any particular purpose never need be a problem to the maker of good confections.

The answer is always at hand in Foote & Jenks complete assortments of quality flavors. Many of the most prominent manufacturers have long since learned this—to their profit—and simply turn over all their flavor problems to our laboratory for solution.

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Sweetened and unsweetened; light, medium and dark, whatever the difference of color or flavor, all are absolutely pure, smooth and uniform to work.

The taste and appearance of confections depend largely upon the coatings.

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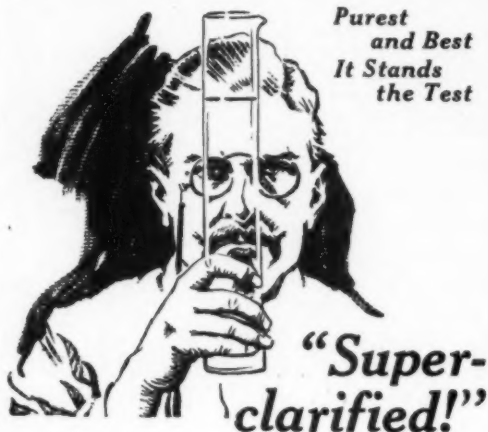
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We make this offer because we're certain Atlantic—the super-clarified gelatine—is best and will save you money.

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Use 1 oz. to 200 lbs.
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The volume of re-orders
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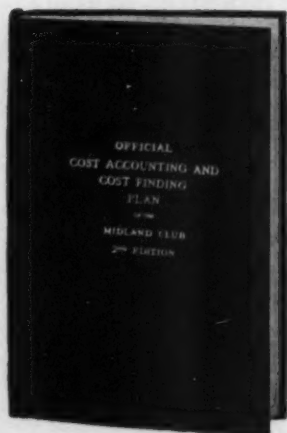
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LACTART is the ideal acidulant for confectionery. Its purity, clarity and complete solubility are unequalled.

With LACTART you can have any desired acidity without any alteration of flavor. It blends with all flavors perfectly. It prevents fermentation and maintains the softness of sugar in soft candies.

LACTART is highly refined, pure, edible Lactic Acid, uniform in strength and quality.

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CONCENTRATED VANILLA FLAVOR

STRENGTH, QUALITY AND PURITY
THE SAME AS ALWAYS

Used for OVER TWENTY YEARS
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FOR SALE—ONE SIMPLEX VACUUM
Cooker complete with motors and blower, latest model; one Brach Cutter complete with conveyer, almost new; 25, 30 and 50 gallon Steam Kettles with mixers; one Savage (After Dinner) Mint Machine complete with conveyer; six Model "K" Kiss Machines, latest models, perfect condition; five Steel Water Coolers. Address 0286, % The Candy Manufacturer.

FOR SALE—SPRINGFIELD STARCH
Cleaner, in good working condition. Price right. F. O. B. Burlington, Iowa. Clinton-Copeland Company.

COMPLETE UP-TO-DATE OUTFIT.
Milk Chocolate and Almond Bar machinery, motors included. Most of the equipment made by National Equipment Co., Springfield, Mass. Apply to 0292, % The Candy Manufacturer.

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"Butcher Boy." Size, 11 in. wide, 22 in. long and 8 in. high. Sectional. Excellent for hardening room. Very light and sanitary. Standard Candy Company, 411 N. Wells St., Chicago Ill. Dearborn 1453.

FOR SALE—ENROBER, NAT'L
Equip., 15 inch; Chocolate Melting Kettles, Nat'l Equip., 2000 lb.; Greer Chocolate Cooling System, Bar Cooling Machine with shaking table, Depositor and Nut attachment, Nat'l Equip.; Weis-hopf Bar Wrapping Machine, Jabez Burns Cocoa Bean Roaster, Bausman Disc Refiner, Shraft System Complete, Enrober Trays, Shraft Trays, Triple Mill, Carey Type; Racine Carmel Cutter, Steel Mogul, Nat'l Equip.; Kiss Wrapping Machine, Model K; Hellman Coco Bon Bon Machine, York Batch Roller with motor, Savage Marshmallow Beater, Day Cream and Dough Mixers, Steam Jacket Kettles; slightly used D. C. Crocker Wheeler Motors, 1/12 to 35 H. P. Full particulars and prices will be sent upon request. Address L275, % The Candy Manufacturer.

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tissue interlined 3" x 3" embossed Aluminum Foil printed in blue block letters with name of Candy 14 different kinds. Send for samples and prices. Chocolate Products Company, Baltimore, Md.

FOR SALE—ONE WERNER CREAM
Cooler and Beater, at \$750.00 f. o. b. La Crosse; One Westerman Wire Machine, at \$350.00; Four Thomas L. Green Marshmallow Beaters, one 60-lb. cap. \$125.00, one 60-gal. cap. \$150.00, one 80-lb. cap. \$100.00, one 60-lb. cap. \$75.00; one Generator Set, consisting of an Allis Engine and 75 K. W. Westinghouse Generator, 720 R. P. M., equipped with Locke Automobile Engine Stop, the Generator delivers 220 volt, 3 phase, 60 cycle A. C., and is of approximately 100 H. P. W. R. Montague Company, La Crosse, Wis.

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WILL SELL OR TRADE ONE PRACTI-
cally new White Caramel Cutter. Desire old style White Machine. Write J. D. Roszell, Peoria, Ill.

WANTED—A SECOND-HAND SAVAGE
Marshmallow Beater, capacity 60 to 80 gallons, also an Egg Beater and a 20 Pump Bar for Springfield Depositor. We have for sale or exchange a 24 Pump Bar for a Springfield Depositor. Hutchinson Candy Co., Des Moines, Ia.

FOR SALE

- 3 Carey Cacao Butter Presses.
- 3 Lehmann Cacao Butter Presses.
- 1 Springfield 3-Roll Refiner.
- 1 5-Roll Steel Refiner, 16x32.
- 1 Lehmann Cocoa Pulverizer, 98.
- 1 Lehmann Cracker-Fanner, large.
- 1 Jabez-Burns Cocoa Bean Cleaner.
- 1 Springfield Cocoa Bolter.
- 1 Racine Depositor.
- 1 Werner Depositor, New.
- 2 Wood Moguls, complete, A-1.
- 6 Mogul Depositor Pumps.
- 1 Springfield Enrober, std. size.
- 2 Kihlgren systems for stringing.
- 2 Fritz Coating Machines, complete.
- 1 Walter Basket Dipping Machine.
- 2 Springfield Continuous Cookers.
- 2 Simplex Gas Cookers, extra kettles.
- 1 Simplex Steam Cooker, almost new.
- 1 Baker Steam Sugar Cooker, cheap.
- 1 Hohberger Cream Cooler and Beater.
- 2 Werner Cream Coolers, new.
- 1 Racine M. M. Beater, jacketed.
- 2 Racine Continuous Cutters.
- 1 Automatic Plastic Machine.
- 1 Mills Cooling Table, 3 x 6.
- 2 Stokes Mint Tablet Machines, D.
- 1 Saxmayer Bundle Tyer.
- 3 Gas Engines (will exchange).
- Mills Bon Bon Machines, Buttercup Cutters, Blowers, Enrober, Belts, Gas Furnaces.

1 New Lehmann 5-Roll Steel Refiner.
1 New Lehmann 8-Pot Press.
When in New York, do not fail to visit our warehouse. All machinery kept in stock is rebuilt. Our guarantee provides for the return of machines that are not satisfactory in every respect. Time payments. Candy & Chocolate Special Machine Company, Inc., 39 Cortland Street, New York City.

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Depositor, \$350.00; 1 Electric Revolving Packing Table, \$200.00; 1 Rotary Electric Scrubbing Machine, \$100.00; 1 Mills Sizing Machine, \$45.00; used sample Cases and one Sample Trunk; 1 Small Power Egg Beater, \$15.00; 1 Marshmallow Barrel Beater, \$30.00; 1 Lady Mint Kiss Cutter, \$15.00; 1 Humbug Kiss Cutter, \$15.00; 1 Hand Butter Cup Cutter, \$12.50; 1 Hand Waffle Cutter, \$10.00. Gurley Candy Company, Minneapolis.

FOR SALE—2 BAUSMANN DISC COM-
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Machinery for Sale.—Cont.

FOR SALE—ONE NEW NO. 2 SCHUTZ-
O'Neill Co. Dustless Sugar Pulverizer with fine collector complete. Aunt Jemima Mills Company, St. Joseph, Mo.

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cine Automatic Sucker Machine, almost new, with or without direct connected motors. Favorite Confections Corp., 348-350 Ellicott St., Buffalo, N. Y.

MACHINERY WANTED.

WANTED—SMALL KISS OR CHIP MA-
chine in good condition. Sioux Candy Co., Sioux City, Iowa.

WANTED—IDEAL CARAMEL WRAP-
ping machine, Junior Model, Type "E." Address N282, % The Candy Manufacturer.

WANTED—NEW OR SECOND-HAND
Starch Cleaner. Please give particulars in replying. Brownfield-Sifers Candy Company, Iola, Kansas.

HELP WANTED.

HELP WANTED—EXPERIENCED
woman to take charge of chocolate coating and packing department in well equipped plant in the south, both machinery and hand coating; applicant must have ability to handle and break in help, maintain discipline and get results. Give references, salary expected and all other information in first letter. All correspondence confidential. Address Empire Candy Co., Macon, Ga.

SITUATION WANTED.

SITUATION WANTED—A PRACTICAL
up to date candy maker or satin finish, hard goods, bon bons, chocolates, crystallizing work and a full line of counter goods, Turkish paste, marshmallows, etc., wants position as working foreman in a first-class retail shop; 30 years' experience. Chas. Dattelzweig, 2112 Berwyn Ave., Chicago, Ill.

FOR SALE—MISCELLANEOUS.

FOR SALE—THE BEST LOCATED
confectionery and ice cream store in a prosperous river town of 25,000 people; largest retail trade in town within 100 miles of St. Louis. Address 0290, % The Candy Manufacturer.

FOR RENT.

FOR RENT—2 story building 48x60 (rear
65 ft. to paved alley, shed and vacant), 2134 North Clark St. Wonderfully located near Lincoln Park and the big hotels. Handsome built-in offices, heating plant, 4 sanitary toilets, new concrete main floor, excellent for sanitary candy factory and retail sales room. Owner: Phone, Randolph 1823, Chicago, Illinois, or address D 300, care The Candy Manufacturer.

BETTER AND BETTER EVERY DAY and it will be BIGGER AND BETTER IN EVERY WAY

The National Confectionery Show

ATLANTIC CITY, N. J.

YOUNG'S MILLION DOLLAR PIER

MAY

21 to 26, 1923

Not many of those who should be exhibitors are missing on the list below.
Those who are should get busy AT ONCE.

The choice of space location is diminishing. You had better get busy. Write, or wire.
Don't leave it until the last minute.

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Acme Steel Goods Co.
Aluminum Co. of America
American Plastic Products Co.
Aridor Company
Atlantic Gelatine Co.
Ayer & McKinney
Franklin Baker Co.
Bendix Paper Co.
Blumenthal Bros.
Boyles Candy Publications
Brooks Bank Note Co.
B. H. Bunn Co.
California Fruit Growers Exchange
Candy Manufacturer Pub. Co.
Clinton Corn Syrup Refining Co.
Continental Paper & Bag Mills
R. U. Delapenha & Co.
J. P. Devine Co.
T. M. Duche & Sons
Thomas W. Dunn Co.
Ferguson & Haas
Foote & Jenks
Franklin Sugar Refining Co.
General Electric Co.
J. W. Greer Co.
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International Co.

Jaburg Bros.
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White-Stokes Co.
H. O. Wilbur & Sons

EXPOSITIONS COMPANY OF AMERICA

Suite M72 Congress Hotel, Chicago

Phone, Harrison 0205

Felix Mendelsohn, Pres.

CO-OPERATION

This magazine is a manifestation of the need and desire on the part of the wholesale manufacturing confectioners for a semi-technical publication devoted to their immediate interests exclusively and its service to the individuals and firms interested directly and indirectly in the manufacture of candy is limited only by the **co-operation** it receives from both subscribers and advertisers.

Inasmuch as this magazine is the connecting link between the confectionery supply manufacturer and the manufacturing confectioner and because the consistent, every-issue advertising of the supply manufacturers in this magazine represents a necessary unit in its success, our subscribers have a right to know the names of our advertisers who are signed up on a six to twelve-time contract basis and who are "sold" on the advisability of presenting their sales and institutional message consistently in every issue. Therefore, their names are listed below in **bold face type like this**. Those who have come in on a short schedule are listed below in light face type like this.

To the best of our knowledge the products advertised in THE CANDY MANUFACTURER have sufficient merit to warrant the serious consideration of our readers; we will appreciate any information to the contrary. We stand willing and ready to assist our subscribers in any possible and reasonable way in connecting with reliable sources of supply or in obtaining redress in any unfair or unsatisfactory transaction with our advertisers, though we assume no obligation in accepting the advertising.

Therefore, when all other things are equal, give preference to the advertisers in THE CANDY MANUFACTURER. If you do not find just the item of equipment or supplies you are looking for, remember you have free access to our Buyers' Directory files.

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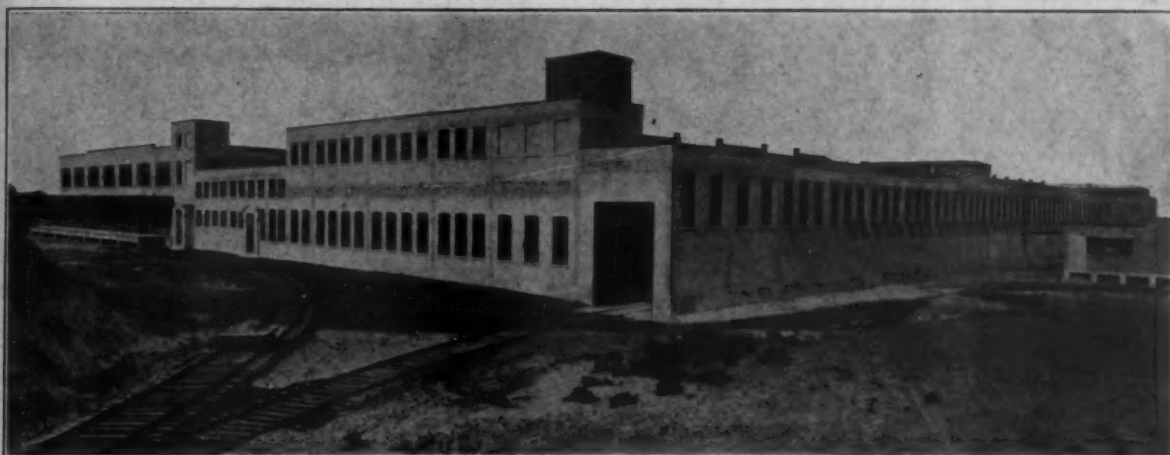
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STATES
GELATINE
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□ □ □



- to the Journey's End

By rail or boat, by truck or wagon, through rain and storm, your goods travel a long, hard way from your factory to the retail store.

No matter how often good wood boxes are loaded and unloaded, handled with hooks, piled under heavy freight, dropped from car to platform and from truck to the ground, they guard your goods from damage.

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Packing
Pays**

Good wood boxes can always be opened for inspection or repacking by jobber or wholesaler. It takes only hammer and nails to make them ready for duty again. They carry your product safely to the journey's end.

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